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AUTHOR	Hansen, Laurie E.
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ABSTRACT

This master's project seeks to determine the impact which parent-child interaction has on children's literacy, math, and science development before the onset of formal education and during the elementary school years. The project also looks at the role teachers play in supporting parent involvement at home and at school. Research suggests that teachers can improve parent involvement by strengthening home-school connections and improving teacher-parent relationships. The product of this project, a handbook on home learning and parent involvement, provides suggestions for teachers on how to improve parent involvement, strengthen home-school connections, and encourage positive parent-child interaction at home. The last section of the handbook is a comprehensive guide that lists learning experiences parents can provide their children at home in order to promote development in literacy, math, and science. (Author/WRM)

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Encouraging Parent Involvement at Home
Through Improved Home-School Connections

A Paper
Presented to the
Faculty of
California State University, Fullerton

In Partial Fulfillment
Of the Requirements for the Degree
Master of Science
In
Education

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Laurie E. Hansen

May, 1999

Approved by:
Tom Savage
Tom V. Savage, Ph.D.
Head, Elementary, Bilingual, and Reading Department

Date May 12, 1999

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Abstract

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Dedication

To Daddy, whose love and encouragement supports me in all I do. This master's project is dedicated to you.

Acknowledgments

There are several people to whom I wish to extend my appreciation. Thank you Lonnie for your love, patience, and sacrifice. You enabled me to pursue my dreams as a wife, as a teacher, as a graduate student, and as a mother. Thank you Lonnie III and Kersten, for sharing me with my schoolwork for the past two-and-a-half years. I love you both with all my heart. Thank you mom, for taking care of the two little ones while I was at school. Without you I would not have completed this master's program. Thank you Susan, for listening to me during stressful times and offering your support. You've "been there, done that", and you knew what I was going through. Thank you to my friends, who have remained supportive of me, even when I was "stressed out" and had no time to socialize.

I would also like to thank my professors in the Department of Elementary, Bilingual, and Reading Education at California State University, Fullerton. I have enjoyed this program as well as learned from it. I am a better teacher and a better parent from having participated in it.

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Chapter One

The Problem and its Investigation

Teachers know that many children enter school under-prepared to learn. Some students struggle learning to read and write, as well as master basic mathematics and science concepts. Many parents desire information on how to prepare their children for school. They also want to know ways they can help their children learn at home once they have entered school. Although parents are often eager to help their children, some are unsure where to start and could use ideas for specific age- and developmentally appropriate home activities. Low income, culturally and linguistically diverse communities pose a particular challenge for teachers. Parent involvement can be especially low in these areas, for a variety of reasons. New and veteran teachers alike may desire information on how to improve parent involvement at home and at school.

Statement of the Problem

The purpose of the writer is to research how parent involvement can be improved, especially at home. The core of this research is to determine ways parents can help their primary-aged elementary school children at home in the areas of reading, writing, science, and math. This information is compiled into an informative handbook designed for teachers who work with linguistically, culturally, and socioeconomically diverse students in Kindergarten (K) through second grade.

The writer will investigate the following questions:

1. Do parents have the ability to provide an educational foundation for their children before the onset of formal education?
2. What can parents do to improve the learning of their school-aged children (grades K through 2) in the areas of literacy, math, and science?

3. What can teachers who work with linguistically, culturally, and socioeconomically diverse families do to promote learning at home?
4. What can teachers do to improve parent involvement at school and in their classrooms?

Rationale

This topic is an important one for several reasons. First, because of the recent class-size reduction in California, there are many new and uncertified teachers. New teachers often choose or are placed in primary grades, especially first grade. This is particularly significant, given these are the grades in which children first learn to read. Many of these new teachers lack concrete suggestions to give to parents that come with years of experience working in elementary classrooms. Second, given the increase in two-income families, many children spend several hours a day in daycare or after school programs. This leaves less time for parents to interact with their children on a daily basis. Parents need ideas for quick and fun activities they can do with their children to help them learn. Third, many children come to school unprepared or underprepared to learn. California's schools continue to see ever-increasing numbers of low income, minority students, whose primary languages are not English. Teachers need to address the needs of all students in a way that is culturally sensitive. Using the same formula that works with White, middle-class families may not work on diverse families. Fourth, teachers of all experience levels can benefit from knowledge of the current research in this area. It would be convenient for them to have a concise handbook full of ideas to refer to. Master and supervising teachers could also benefit from having such a handbook, since they could distribute it to their student teachers. Last, the students would benefit from this project because as parents begin to use the suggestions in the handbook, student learning, understanding, and development may improve.

Other scholars have focused on parent involvement in the schools as a means to improve student outcomes. Parent participation at school is an important place to start, but this is a complex issue. Parent involvement is multi-faceted. One critical and often overlooked aspect of parent involvement is the effect parents have on their children before they enter school. The impact parental interaction can have on children beginning at birth is the heart of this project.

Assumptions and Limitations

The writer has made the following assumptions:

1. Most parents care about their children and wish to see them succeed in school, regardless of cultural, language, ethnic, or socioeconomic background.
2. Teachers have limited time and resources with which to implement a parent involvement program. However, given the importance of this topic, teachers would be willing to devote time and effort to improving parent involvement in their classrooms.
3. This project is intended for use with students free from extreme circumstances, such as abuse, neglect, homelessness, and hunger.
4. The ideas described in this handbook have the potential to be of benefit to all students, including those with physical and learning disabilities. However, the handbook was written under the assumption that the majority of teachers who would use it would be regular education teachers operating in self-contained classrooms.
5. The author assumes that all children are different. Teachers should consider each child's special circumstances, including previous experience, abilities, challenges, and home situation, before making any suggestions to parents.

The writer has established the following limitations:

1. Although parent participation at school is addressed in this project, the main focus is on parent involvement as it relates to home experiences, e.g. what parents do at home to help their children learn.
2. The main focus of this project is on the areas of literacy, math, and science.
3. This project focuses on Kindergarten through 2nd grade.
4. This project was written for teachers of culturally, ethnically, and socio-economically diverse students, although the ideas can be adapted for middle-class students as well.

Definitions of Important Terms

age-appropriate activities: activities that are designed for the children of a particular age group, within a normal range of development for that age (e.g. infants, toddlers, preschool children, and primary grade children).

cognitive development: academic or intellectual development.

developmentally appropriate activities: activities that are designed to be appropriate for the developmental level, rather than age, of a group of children.

fine motor skills: skills that involve using the small muscles of the hands and fingers.

gross motor skills: skills that involve using the large muscles of the body, e.g. the arms and legs.

language development: children's development of oral and written language.

literacy development: children's development in reading, writing, speaking, and listening.

parentese: the special way that parents use tone of voice, facial expressions, gestures, eye movement, and choice of words to facilitate understanding of language on the part of an infant or toddler.

performance arts: drama

physical skills: development of fine and gross motor skills.

primary grades: grades Kindergarten, first, and second.

primary language: the "native" or first language a person learns to speak.

pull-out program: program in which children are pulled out for a period of time each day or each week to receive special services (e.g. speech, counseling, reading remediation).

scaffolding: assistance provided to a child by an adult that allows the child to work at a level beyond that which they do by themselves.

science: subject area that encompasses study in biological, earth, and physical science.

self-contained classroom: class in which a group of twenty to thirty-two children spend the entire day learning with one teacher.

socioeconomic status (SES): a measure of a family's relative position in a community, determined by a combination of parents' income, occupations, and levels of education.

special education: programs designed for children with special needs, such as learning disabilities, physical handicaps, or severe emotional problems. Can include pull-out programs or self-contained classrooms.

visual arts: includes study of and creating pieces of art, such as drawings and paintings.

Organization of Remainder of Paper

The remainder of this paper is organized as follows: (a) Chapter Two, Review of Related Literature; (b) Chapter Three, Design of the Handbook; (c) Chapter Four, handbook entitled Parent Involvement and Home Learning; (d) Chapter Five, Summary, Conclusions, and Recommendations; (e) References; and (f) Bibliography.

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Chapter Two

Review of Related Literature

Today there are many elementary school students who are behind, developmentally, in all or some forms of literacy (speaking, writing, listening, and reading). In addition, many students currently struggle learning the basic concepts of science and math. These core areas tend to be the focus of concern for parents and teachers alike. Many of the students who encounter difficulty in these areas come from low income and/or culturally and linguistically diverse families. At the same time, a great many students (especially in primary grades) are taught by teachers with less than five years experience. What can be done to help alleviate this problem? One, often untapped, resource to new and experienced teachers is parents.

The following review of literature will discuss types of and barriers to parent involvement, the importance of parent-child interaction at home, and the role teachers can play in facilitating stronger home-school connections in order to improve student development in literacy, math, and science.

Parent Involvement

Types of parent involvement. Parent involvement has many facets and takes many forms. For the purpose of this project, parent involvement can be described as having two broad components: school and home. At school, there is a continuum of parent participation. Some parents prefer to participate by baking cookies or donating food for a class party. Some enjoy accompanying the class on field trips. Others like to help in the class, with academic activities. There are also many ways parents can participate at school-sponsored events, including attending parent-teacher conferences, back-to-school night, and open house. According to Shannon (1996), some parents become involved by actively assuming the role of advocate for their children's rights. These are the parents who have no problem working with schools and teachers to see their child receives the best education possible.

In addition to the many ways parents can participate at school, there is a home component of parent involvement. There are many ways parents can work with their children at home to help them be successful at school. These activities range from quick to very time-consuming and are sometimes taken for granted by teachers. Parents must fill out school paperwork, such as emergency cards and field trip slips. Attendance is another critical area of responsibility for parents. To be successful, students must arrive to school on time, every day. Children must also come to school ready to learn. One aspect of this is that they should be properly groomed and free from hunger. Another aspect of this is academic readiness. Perhaps the most important of all the things parents can do at home for their children is to work with them on school (e.g. homework) and everyday learning activities (e.g. shared reading). This specific type of parent involvement is the focus of this master's project. This project focuses on parent-child interaction at home as a means to facilitate students' literacy, math, and science development.

Barriers to parent involvement. As stated previously, there are many ways for parents to participate in their child's education. It is important to note there are barriers that can hinder all forms of parent involvement. Eggen and Kauchak (1997), McCarthey (1997), and Winlock (1994) all described the significance of language, cultural, and economic barriers to parent involvement. According to these authors, parents may be reluctant to participate in schools because they do not speak English or they belong to a passive culture. They may feel intimidated by the school staff or awkward approaching school personnel. Some parents have employment commitments that preclude them from participating during regular school hours. Other parents lack childcare or transportation. There are also obvious monetary and technological issues. Some parents simply do not have the economic means to provide educational materials the way that many middle-class families can. These parents may not own phones, much less computers. Other factors, such as having negative school experiences as children, may prevent parents from participating at school.

In addition to all of the above barriers to parent involvement, many parents do not become involved simply because they are not invited to participate (Winlock, 1994). Some parents are even discouraged from participating. Teachers can discourage parent involvement, whether they are aware of it or not. According to Shannon (1996), social status can be a significant barrier to parent participation. While high status parents tend to be proactive, low status (e.g. minority, low SES) parents assume more passive roles. They tend to defer to authority, not to criticize teachers, and to tolerate poor educational conditions. Thus they tend not to become involved at school the way high status parents do. Shannon found that a paradox of parent involvement exists with regard to low status parents: teachers criticize passive parents for their lack of involvement, but respond negatively if low status parents participate as their high status counterparts do. In other words, teachers may expect parents, regardless of their cultural or economic background, to participate at school with little or no encouragement.

All in all, barriers to parent involvement are a critical piece to the puzzle of children's math, science, and literacy development. Unfortunately, many parents have a strong desire to help their children learn at home, but don't know how. Others feel they cannot help their children because they do not speak or read English well enough. It is important that parents feel comfortable enough to come to school and meet with their children's teachers. This is a critical first step to strengthening parent-child interaction in the home. The following discussion of the home aspect of parent involvement should shed some light on the importance of this topic to young children's cognitive development.

Parent-Child Interaction at Home

Current brain research. There are many articles espousing the benefits of positive parent-child interaction beginning at birth and continuing on throughout childhood. Indeed, new breakthroughs in brain research occur constantly, and most support the idea that the early childhood years are critical to long-term cognitive development. According to Nash (1997), rich experiences with caring adults promote learning in early childhood. It is particularly important for low SES parents to talk to young children and provide stimulating activities and an enriched environment as best they can. Nash also stated that the human brain possesses remarkable resilience. Although the first three years of life are considered crucial to cognitive development, she asserted that well-designed programs can help older children overcome learning disorders such as dyslexia. This is especially good news, considering how few early childhood parent education programs there are.

Like Nash, Bower (1996) discussed the importance of the early years of childhood. She asserted that quantity and quality of parent-child discourse from birth to age three is critical for later school success. She described a study conducted by Hart and Risley that indicated parents in professional families talked twice as much with their young children as working-class parents did, and four times as much as welfare parents. The researchers found that children exposed to high levels of parental talk had higher IQ scores at age three than other children who had experienced less interaction with their parents. According to Risley, enrolling children in preschool programs such as Head Start may be ineffective in the long run, because the intervention occurs too late to help low SES children who received minimal parent-child interaction as infants and/or toddlers.

Begley and Hager (1996) also asserted that the progress children make in preschool programs can be short-lived because intervention occurs too late. According to the authors, the experiences children receive in the first three years of life are so critical to cognitive development that if they do not occur within certain time windows, brain development may be forever affected. Begley and Hager delineated the time windows as follows: math and logic is best developed before age four; language, before age two for first language acquisition, before age ten for a second language acquisition; and music, from age three to ten. The authors again concurred with Nash in that they stated although the pre-school years are critical, certain special interventions for children with learning disabilities may be effective even for older children (ages five to ten).

Melmed (1997) also described the first three years of life as critical, a unique opportunity for learning and development. He asserted that new findings in brain research should help parents and other adults significant to children's lives (grandparents, relatives, childcare providers) understand how they can positively affect children's development. He also said that parents do not understand the full significance of early childhood. While many parents feel they can have the most impact on their children's emotional development during infancy and toddlerhood, they underestimate the potential for social and intellectual development during this time. Indeed, many parents feel intellect is determined more by nature, than nurture or environment. The author underscored the importance of caregivers in the lives of young children and stressed their role is critical in children's emotional, social, and cognitive development. Given the potential parents and other caregivers have to shape young children's development, Melmed suggested that it is best to inform parents early, when their children are very young, or, optimally, before they are born. This way, parents will feel motivated to help their young children, rather than feel guilty they have missed their opportunity.

Despite the seemingly hopeless news for older children who received little parent-child interaction during infancy and toddlerhood, more recent brain research contradicts previous studies that showed brain cells stop multiplying after birth. Hotz (1999) reported on a study that showed brain cells double in number after birth, mostly during the first six years of life.

Hotz asserted that learning and an enriched environment stimulate brain cell growth throughout early childhood and beyond.

Importance of parent-child interaction for early child development. In addition to brain research describing the effects of an enriched infancy and toddlerhood, several studies provided quantitative data supporting the importance of parent involvement in children's preschool learning experiences. These studies suggested ways to improve parent-child interaction at home. The following studies provided information specifically on literacy development.

Bus, Belsky, van IJzendoorn, and Crnic (1997) conducted a longitudinal study of middle- and working-class Caucasian families and their firstborn sons to determine if the socio-emotional relationship between parent and child affects quality of bookreading experiences. They found that the higher the quality of mother-child relationship, the more positive reading behaviors (such as labeling, commenting, and nonverbal responses) the children exhibited. Conversely, children with less secure relationships with their mothers were found to be significantly more aggressive towards their mothers, more unresponsive to books, and more easily distracted. Maternal behaviors were also found to affect bookreading. The less secure the mother-child relationship, the more likely the mothers were to be less interactive, less able to use age-appropriate interaction, and less likely to comment, label, point, question, or nonverbally respond. Many of these mothers resorted to verbatim reading of the text. They also tended to be over-controlling, focusing on correcting their children's behavior and motivating them to focus on the book.

The authors concluded that mother-child social relationships affect bookreading experiences. They suggested that it may be counterproductive to encourage bookreading at home without helping parents change their reading and interaction habits with their children (Bus et al., 1997).

In another study on literacy development and parent-child interaction, Leseman and de Jong (1998) conducted research with volunteer families in the Netherlands to determine if home literacy has significant effects on language and literacy development. They found the combined effects of home literacy, including home literacy activities, parental reading instruction quality, and the quality of the parent-child social-emotional relationship to be *less* predictive of improvement in vocabulary, decoding, and comprehension than home language, SES, or parents' literacy. The authors concluded that certain aspects, such as the sociocultural context of home literacy, need to be considered when designing and implementing programs promoting home literacy.

A third study on literacy development conducted by Bus and van IJzendoorn (1995) looked at mother-child attachment and frequency of book reading. The researchers sought to determine if mother-child attachment relationships explain differences in the frequency of books read together at home. They found a relationship between mother-child attachment and frequency of reading. The authors found that frequently-read-to children are more willing to share unfamiliar books, that insecure children are read to less often, and that mothers of infrequently-read-to children are more apt to read the text verbatim. Bus and van IJzendoorn concluded that for low SES children especially, mother-child attachment security is related to frequency of reading. They asserted that, in order for children to learn to read, they need more than an environment rich in books. Rather, children's literacy development strongly depends on their parent's ability to involve them in literacy experiences.

In another article on literacy development, McMullen (1998) described the importance of certain activities for promoting higher level symbolic thinking in preschool children. She stated that symbolic thinking is key for the development of problem solving as well as reading and writing literacy in early childhood. She suggested that block building, dramatic play, drawing, painting, scribbling, listening, speaking, and attending to print all promote emergent literacy in very young children. Older children's emergent literacy can benefit from retelling stories, writing strings of random letters, using developmental spelling, and using contextual clues to tell a story. All of these activities involve symbolic thinking and pave the way for symbolic problem solving and conventional reading and writing. She stressed the importance of social interaction between parents (or caregivers) and children as a means to foster cognitive development. She also described the importance of a challenging learning environment, which ideally should include reading areas, space for block building, manipulatives, play pretend areas (e.g. kitchen, dress up, workbench play centers), and areas for drawing and writing. She pointed out the importance of allowing children plenty of time for self-directed activities, in order to promote knowledge construction, exploration, and self-discovery. She stated parents should be encouraged to allow children to take risks. She also suggested parents gently encourage their children through questions and comments, but without interfering.

Weinberger (1996) also conducted a study to investigate the relationship between home factors and literacy development. She reported that parents play a significant role in the lives of children who learned to read early. The parents studied encouraged and valued literacy activities at home, read to their children from an early age, and had reading materials available in the home. Consequently, the children engaged in many reading and writing activities at home and had a greater knowledge of literacy upon entrance to school than those children with limited literacy experience. The author found that whether or not children had a favorite book at age three was a significant factor in determining reading proficiency at age seven. Having a favorite book indicated early book experience, including access to books, interaction with parents, and children's inclination to read.

The above studies all support the idea that the early childhood years are extremely important. However, what parent-child interventions can help children who had limited experiences and interaction before entering school?

Importance of parent-child interaction for school-age children. According to Moore (1998), talk is an integral part of language and literacy learning. For example, when sharing books, children and adults extend the meaning of books through activities such as labeling, naming, and discussing.

According to Hayden and Fagan (1995), children are a part of many social networks, including family, community, school, and church. The social relationships within these networks have a powerful impact on students' everyday lives. One way social relationships affect students is in their literacy development. Hayden and Fagan assert that literacy does not occur in isolation. Rather, it is always part of a social relationship, such as parent-child or sibling-child.

Throssell and Campbell (1993) suggested that families play a critical role in young children's literacy development. While some children come from literacy-supporting homes and therefore come to school with an understanding of literacy, many children's literacy is less well developed before school because they come from families where little support is provided.

There is also evidence to support the idea that children learn from their siblings at home. Perez-Granados and Callanan (1997) conducted a study of European-and Mexican-American families to investigate science learning in children and how their development in this area can be promoted through daily interaction with parents and siblings. They asserted that children learn through discovery and everyday activities, and through interaction with their parents and siblings. They found that social class mattered more than cultural differences between the two groups. The authors found that parents' conversations with their children and the "why" questions the children asked about the world around them facilitated the process of scientific discovery and encouraged the children to wonder about and investigate their world. They found that interactions with siblings promote children's social, emotional, and cognitive development. They reported that while younger siblings are more likely to learn academic (e.g.

songs, colors, letters, numbers), play (e.g. sharing), self-care (e.g. using the potty), and social (e.g. communicating) skills from their older siblings; older children are more likely to learn social and play skills from their younger brothers and sisters.

Brooks, Bruno, and Burns (1997) conducted a study with families of kindergarten, first, and second grade students to improve student motivation by increasing parent participation at home and at school. The authors' review of literature was concurrent with the others cited in this review of literature in that they asserted that parent-child interaction and home environment are critical for children's development. Children whose lives are rich in appropriate experiences and interactions are more likely to be successful at school. They also indicated that although most parents want their children to succeed in school, many do not know how to get involved. They suggested that parents need specific suggestions of how they can help their children at home. They also emphasized the importance of frequent high-quality home-school communication.

Role of Teachers

The previously mentioned articles and studies pointed out the importance of parent involvement at home from birth throughout the childhood years. Teachers play a critical role in promoting parent involvement through strong home-school connections. Teachers can have a tremendous impact on the lives of their students and their families. They are in a unique position to serve as advocates for their students and help guide parents to make the best educational choices for their children. There are, however, some issues that must be tackled in order to optimize parent-teacher partnerships.

Teacher attitude toward student and family diversity. Low parent involvement often causes teachers and schools to negatively view minority students and their families. McCarthey (1997) asserted that schools have traditionally adopted a deficit view of conceptualizing children from diverse backgrounds. Some educators believe that minority students' home experiences are deficient in language learning and socialization, and that minority students' parents place little value on education. They see students who come from diverse backgrounds as handicapped. This view of course influences educational decision-making and practices. Schools with affluent populations tend to provide more opportunities for students to make decisions, express ideas, and apply concepts. Conversely, schools with working-class populations tend to focus more on rote learning and limit opportunities for student choice (McCarthey; Freeman & Freeman, 1994).

Gonzalez et al. (1995) also asserted that many teachers hold a deficit view of minority households. They suggested using home visits to gain a better understanding of children and their families and debunk the idea that minority households lack worthwhile knowledge and experiences.

Several authors discussed the need for teachers to understand differences in parent involvement across various cultures. For example, Hong (1998) stated that in Mexico, schools take responsibility for school matters and parents respectfully stay out of the way. This is in contrast to American schools where parents are expected to become actively involved in their children's education. Many times, teachers interpret the behavior of culturally diverse families to indicate indifference.

Valuing parents' contributions. It is important to acknowledge that teachers' views of diverse students and their families can serve as another type of barrier to parent involvement. One way to move away from this deficit model of thinking is for teachers to value students' home experiences and elicit parent contributions. Lazar and Weisberg (1996) found that parents are often overlooked as a valuable source of input about their children's development. They suggested teachers and parents develop non-traditional relationships, in which parents actively contribute information, rather than merely receive it.

McCarthey (1997) also found that many families' contributions to children's development are overlooked. He asserted that especially for non-middle-class children, a gap exists between students' home and school literacy experiences. Schools traditionally have expected children to come to school prepared and ready to learn. Teachers expect the home experiences of their students to be congruent with the experiences they receive at school. McCarthey found that for non-middle-class children, this is not the case. There is a tendency for schools to devalue and ignore these students' home literacy experiences. Because most teachers come from a middle-class background themselves, they have a stronger connection to the middle-class students, adopting classroom practices that favor those students' home literacy experiences. For example, they tend to choose books that reflect the culture and experience of the White middle-class. McCarthey asserted that overall, teachers know less about working-class students and do not make sufficient attempts to try to learn about them or their families.

In another study that supported the idea of valuing parent contributions to student learning, Baumann and Thomas (1997) found that a general value of education and support for literacy learning in the home does not depend on language, culture, ethnicity, SES, or marital status. They suggested that students' home experiences be used as a foundation for teachers to build upon at school. For example, many minority children have a rich family literacy, receiving support from parents, aunts, grandparents, and siblings. The authors suggested that teachers support students' literacy learning through: high expectations; a demanding, culturally responsive curriculum; and a positive system of home-school communication.

These articles suggested that teachers should work to build stronger home-school connections. The following articles describe what this means.

Fostering positive home-school connections. Teachers who are aware of barriers to parent involvement and the gap between diverse students' home and school experiences can use this knowledge to make positive changes in the classroom. Lazar and Weisberg (1996) asserted that understanding children as literacy learners at home helps teachers support learning at school. The teachers in their study used home response journals to communicate with parents important information about students' school experiences and progress in reading. The journals were sent home on a regular basis and the parents were encouraged to respond to the teachers with information about their children's home life, learning, interests, and experiences. The teachers found that communicating with parents in this way enabled them to: plan more effective instruction; better understand students' cultures; inform parents of student successes; and convey their philosophies of learning, teaching, and literacy. This reciprocal communication enhanced mutual trust between teachers and parents and became a source of empowerment for both. Parents began to think of their children as readers; had a newfound opportunity to convey their own philosophies of literacy learning; began to understand "school ways" of teaching literacy; and had an outlet for voicing their concerns. Lazar and Weisberg found these positive outcomes improved students' literacy development.

Webb (1997) pointed out the importance of parents as children's first teachers and asserted that, in general, those students who receive support at home on an on-going basis from parents and other adults experience more success at school. According to Webb it is important to involve parents early in their children's education and establish positive home-school communication well before children enter Kindergarten.

Gonzalez et al. (1995) found home visits to be a powerful means for teachers to identify the "funds of knowledge" (social and intellectual resources) that exist in working-class minority students' homes. They found parents' and teachers' attitudes can be improved if teachers enter students' homes for the express purpose of learning about the students and their families and promoting positive relations. They found such home visits to have many positive effects: parents began to view themselves as change agents in their children's education; parents felt an increased access to schools; teachers and students had stronger relationships; and teachers used the students' funds of knowledge as bases for curricular units.

McCarthey (1997) found that by learning more about students' social-cultural backgrounds, teachers can address the needs of diverse students more effectively. She stated that culturally relevant teaching, including using literature that directly relates to students' own experiences and providing a diverse repertoire of instructional strategies, may help teachers decrease culture and class differences among their students.

Baumann and Thomas (1997) found that minority, low SES, and single-parent households have a strong commitment to literacy learning that can serve as a base for teachers to build upon in developing stronger home-school connections. This in turn can support students' literacy development. They also stated that with regard to literacy, teachers and parents should have high expectations for diverse students, as this predicts learning and growth.

Rich (1996) described the importance of constant, positive communication between teachers, parents, and children. She asserted that it is important for teachers to have knowledge of their students, their school, and their home situations.

Each of these articles mentioned the importance of building better home-school connections between teachers and parents. What exactly can teachers do to accomplish this?

Suggestions for teachers. According to Fitton and Gredler (1996) most parents are very interested in helping their children do well at school and want to assist their child's teacher toward this end. The authors asserted that parent involvement improves school performance with minimal cost and time demand on teachers as compared with interventions such as one-on-one and small group reading time with school reading specialists and/or teachers. Like many other reviews of literature, this one stated that children who are read to more often are better readers. They recommended that teachers send books home, encourage parents to read with their children, and recommend that parents take their children to the library. However, they stated that simply reading at home is helpful, but does not provide maximum benefit for children with reading difficulties. The authors went a step further to suggest that parents need to be taught (through formal parent education training) specific techniques for reading with their children, along with how to select appropriate books, how to appropriately correct their children, and what specific reading skills are.

Melmed (1997) also suggested that most parents are very interested in learning about how children learn, early brain development, and what they can do to help their children maximize their potential. He stated that parents need information not only on the importance of working with their children (especially during the first three years of life), but also specific activities they can use with their children to help them develop emotionally, socially, and intellectually. He further asserted that early childhood professionals are in an excellent position to help provide parents with information and support to help them work with their children, and ultimately, become better parents.

Webb (1997) suggested a parent involvement program should communicate positive parenting techniques, inform parents of community resources and services, help parents develop positive attitudes toward the school, educate parents as to how children learn (to speak, to read), give parents examples of developmentally appropriate learning activities and environment, and help parents develop positive attitudes about their children's abilities. The teachers in this project worked with low income parents. They showed the parents activities they could do at home with their children to increase learning, encourage parent-child interaction, and promote positive self-concept. The parents also had the opportunity to make and take home educational toys and books made from inexpensive materials. This was especially important, because it helped parents see they had a lot to offer their children, despite their lack of money.

Although much literature exists on how to improve parent involvement through home-school connections, most teachers do not have access to it, simply because they do not have time or inclination to do library research (unless they are master's students!) One way to overcome this is for new and experienced teachers to participate in pre-service and in-service training that addresses ways to make the most of parent-teacher relations and promote parent-child interaction at home.

Importance of Teacher Training

Unfortunately, several articles suggested that there is a paucity of teacher training in the area of parent involvement. For example, Kreider (1998) suggested that while many families do not know how to become involved and work with teachers, most new teachers do not receive enough training as to how to work with all types of families to encourage parent involvement. She asserted that parents and other family members want their children to do well in school and that they can help their children succeed if they work together with schools and teachers. She pointed out that parents are experts on their own children, with knowledge of their specific interests, talents, and challenges. She also suggested that teachers must know the following key items: their students' families and cultures, how to involve families in their children's education, how to communicate with parents, and how to help parents help their children learn at home.

Like Kreider (1998), Freeman and Karr-Kidwell (1998) asserted that teachers do not receive adequate training in parent involvement, as evidenced by the many states that do not require teachers to study parent involvement during preservice instruction. The authors stated that parents affect cognitive, affective, and behavioral learning in their children. They asserted that partnerships between parents, teachers, and students are essential to the education process and that parents must become more involved in all aspects of their children's education. They also stated that regardless of socioeconomic status, all parents want their children to receive the best educational foundation possible and that parents are the most significant factor in establishing this foundation.

Although teacher training would be beneficial in addressing issues of parent involvement at home, it may not be available to all districts and teachers. The product of this master's project is a teacher's handbook addressing this issue. This handbook includes ideas to help parents interact with their children on a daily basis, supporting them in the areas of literacy, math, and science development. The handbook is user-friendly, and suggests ways for teachers to make the most of the time and resources they and the parents have available.

Chapter Three

Design of the Handbook

Organization

The handbook is organized as follows: the first chapter describes how teachers can build strong home-school connections; the second chapter explains how teachers can encourage positive parent-child interaction at home; the third chapter provides a basic overview of early home learning experiences in the areas of literacy, science, and math; and the fourth section is an alphabetical list of specific learning experiences and activities parents can do with their children to promote literacy, math, and science development.

This handbook is organized this way because it is necessary to first address the issue of parent-teacher communication and home-school connections. Teachers will not be in a position to make suggestions to the parents unless a strong foundation is built at the beginning of the school year. Once teachers have established positive relationships with the parents, there are ways for them to encourage parent-child interaction at home, as discussed in chapter two. Section four is the heart of the handbook, containing many inexpensive and simple activities parents can do at home with their children. Activities are arranged alphabetically, rather than by subject area, because there is a lot of overlap of subjects, skills, and concepts learned.

Overall, the activities in this handbook are appropriate for children ages birth to eight, with modifications necessary depending on the age and developmental level of the child. It is important to look at each child on a case by case basis and recommend activities to the parents based on the child's previous experience, social and emotional maturity, and developmental needs.

Sources of Activities and Materials

The following books, instructors, and courses were especially helpful in contributing activities for this handbook. The activities represent a synthesis of my own personal experience in the classroom and as a parent, and ideas from journal articles and books. The most influential of these books were: the Your Child at Play series by Segal (1998), Mud, Sand, and Water by Hill (1995), Science with Young Children by Holt (1993), and The Child's Construction of Knowledge by Forman and Kuschner (1997).

Several Elementary Education (EDEL) courses were particularly helpful in preparing for this master's project, including: EDEL 511, Survey of Educational Research, taught by Dr. Andrea Guillaume; EDEL 529, Graduate Studies: Learning Theory for Classroom Use, taught by Dr. Patricia Keig; EDEL 530, Graduate Studies in Elementary Education: Second Languages, taught by Dr. Evelyn Weisman; EDEL 532, Graduate Studies in Elementary Education: Mathematics, taught by Dr. Norma Molina; EDEL 533, Graduate Studies in Elementary Education: Science, taught by Dr. Patricia Keig; and EDEL 571, Graduate Studies in Elementary Education: Science Education Practicum, taught by Dr. Patricia Keig. The last class mentioned was particularly helpful because the professor allowed class members to create some of their own projects. This made the assignments especially relevant to the students, because it allowed the professor to address the needs and interests of the class. Much preliminary research on the topic of this master's project was gathered and analyzed as part of this class.

Criteria Applied to the Selection of Activities and Materials

The activities in this handbook were specifically selected to be age-and developmentally-appropriate, easy to understand, and inexpensive to implement. Both teachers and parents should find them "user-friendly". The activities were chosen because they can be used with a variety of students from many cultures and backgrounds, and with a myriad of skill levels. These learning experiences are intended to help all the students a teacher might find in a typical elementary classroom. The activities can be easily adapted for advanced, regular, and special education students, and are in line with the suggestions yielded by the review of current research.

Chapter Four

Parent Involvement and Home Learning

The following handbook is designed to help elementary classroom teachers strengthen parent involvement and encourage positive parent-child interaction through a program of strong home-school connections. The handbook describes ways to: 1) improve parent involvement throughout the school year, 2) strengthen home-school connections and 3) improve teacher-parent relationships. The handbook also provides a general overview of home learning experiences and offers a comprehensive list of activities parents can do with their young children (ages birth to eight) at home in order to facilitate children's literacy, math, and science development.

Parent Involvement and Home Learning

By: Laurie E. Hansen

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Every teacher instinctively knows parent involvement is important. Most teachers want to increase parent participation at school, in the classrooms, and with the students at home. Many teachers recognize the impact positive parent-child interaction at home can have on children's school success. They see the effects an enriched home environment can have on the children in their classrooms. Typically, children who have had rich experiences and plenty of positive interaction with parents and other caring adults do better in school than students who received less parental support and attention. Although levels of parent involvement differ, most parents want the best for their children. This is true regardless of cultural background, first language spoken, or income level. Most parents would like to help their children at home in some way. Despite this desire, there are some barriers to overcome. Today's parents are busy and many face special challenges and circumstances. Some students come from homes with a single parent or two parents that work full-time. Other parents feel overwhelmed by the demands of a large family. Some parents feel they lack the material resources necessary to really help their children succeed. Some are unsure as to how to help their children learn at home. Whatever the reason, many children do not receive as much quality interaction with adults as they should.

Even material wealth cannot guarantee students will be successful. Middle- and upper-class parents may wonder how they can best help their children succeed in school and in life. In an age of black-and-white crib toys, "Baby Einstein" video tapes, and "Teach Your Infant to Read" books, parents may feel bewildered as to what is appropriate for their child's growth, development, and age. It is easy for parents to feel guilty they are not doing enough. Most parents are not familiar with current educational research on appropriate teaching practice, so they may be tempted to try less-than-desirable options, such as drilling a baby with flash cards. As their children grow older, they may turn to home learning programs that focus on rote memorization and drilling of facts. Others enroll their children in expensive after-school tutorial programs that may be staffed by under-qualified personnel. These options are poor substitutes for quality parent-child interaction. Although parents may feel they do not have enough time to spend with their children, quality, not quantity is what really matters. One-on-one help and attention from parents, grandparents, and caregivers provides invaluable benefits to most children.

Another reason to focus on the impact parents can have in improving student learning and development is that it is cost-effective, because it is a preventative measure. Children receive help before problems arise. Currently, school districts spend millions of dollars on reading and math remediation, pull-out programs, and special education evaluation and implementation. A less costly alternative is available. Parents have the potential to provide important one-on-one support all students need. Parents must be educated and informed, as early as possible, as to the affect they can and do have on their children's futures. Whether we realize it or not, parents are one of our greatest untapped resources.

Teachers can take a proactive position by encouraging, supporting, and educating parents in their role as their children's first and most important teachers. This handbook describes how to accomplish this in a step-by-step fashion. The first chapter describes ways to improve parent involvement in the primary classroom by building strong home-school connections. The second chapter describes how teachers can use a home learning program to encourage positive parent-child interaction at home. The third chapter provides a general explanation of how literacy, math, and science development can be promoted through home learning experiences. The fourth chapter lists and describes recommended activities for parents and children to do together.

Chapter One

Building Home-School Connections

Initiating Contact with Parents

Welcome Letters

Teachers have many opportunities to strengthen parent participation in their classrooms and in their students' homes. The best time to begin is before the school year starts. One way to accomplish this is to send out a welcome letter to the students and their parents a couple weeks before class starts. This is not the best time to describe a classroom management program (at least not yet!). For some parents, the first communication they have with their child's teacher involves a discipline issue. This is a rather negative way to begin a relationship. It is better for teachers to use this opportunity to introduce themselves and give parents an idea of their philosophy of teaching and learning. This sets a positive tone for the year and lets parents know the teacher is available as a resource to them. It also shows the teacher has a strong commitment to the success of each child in the class, and that it is expected the parents will share equally in this commitment. Of course, because many parents either don't speak or read English, it is vital the letter be translated into the first languages represented in the class, and sent along with the English version.

Phone Calls

Another excellent way to initiate contact with the parents is to call them before school starts. This is best done in conjunction with the welcome letter. This is a great opportunity for teachers to introduce themselves, welcome each child to the class, ask parents if they received and/or understood the welcome letter, and briefly discuss positive expectations for the year ahead. Perhaps even more important, the parents and students now "know" the teacher, and will be less anxious about meeting him or her on the first day of school. Again, language may be a barrier in some cases. Parents who prefer to speak in a language other than English may be contacted on the teacher's behalf by a bilingual teacher, teacher's aide, or former parent. In such cases, the conversation can be brief, perhaps along the lines of: "Mrs./Mr. So-and-so would like to welcome your child to her/his second grade class this year. She/he is looking forward to meeting both of you the first day of school. Do you have any questions for her/him?" Obviously, the classroom teacher must be there to answer any questions the parents might have. This may seem like a lot of extra work, but it is very important to establish early contact with parents and lay the groundwork for a successful school year.

Face-to-Face Contact

Once the school year starts, it is important to meet each parent face-to-face as soon as possible. Many teachers wait until Back-to-School night, but because this event usually occurs two or three weeks into the year, it is better to start even earlier. One way to accomplish this is to invite parents to come by on the first day of school. Before school is ideal, but they can also come during the day or after school, if their schedule precludes a morning meeting. The welcome phone call is an ideal time to invite them. Parents should be encouraged to stay with their children a few minutes after they drop them off at school. As the children and parents congregate before the school bell, the teacher can go out early and introduce him- or herself, and mingle with the new students and their parents. When the bell rings, teachers can invite parents to come up to the room for a short meeting. After taking roll and a brief introduction, the children can sit quietly on the floor or at a desk and read books from the classroom library. (The kids should behave really well, because their parents are standing in the room!)

During the time the children are reading, the teacher can take the opportunity to talk with the parents. If there is any mandatory paperwork, such as emergency cards, this is a good opportunity to hand them out. Children often lose important paperwork, and the teacher can let the parents know how important it is these are filled out and returned promptly. This is also a good time to briefly discuss the homework policy. It is not necessary to go into deep detail (a letter sent out with the first homework packet can do that), but it is helpful for parents to know key elements at this point, such as when homework is due and how often it is handed out. The teacher can also encourage parents to attend upcoming events, such as Back-to-School night. It is also important to allow time for parents' questions. This is also a good time to invite parents to visit the class during the school day. Parents have the right to see what is going on in the class, and it is important they feel welcome. Although the teacher has twenty to thirty children in the room to attend to, parents concentrate on the one child they have in the classroom. Each child is immeasurably important to his or her parents, probably adored by them. It can be worrisome to leave one of the most important people in their lives in the care of an unfamiliar, albeit well-trained and caring, person.

Those parents who cannot come by in the morning on the first day of school can be encouraged to stop by some time during class time that day. Little gets accomplished the first day of school (academically speaking), anyway, so it will not matter if parents are coming in and out. Teachers should plan whole class or small group activities for the children that will keep them busy and require less direct instruction. That way, as parents drop in, the teacher can stop and go over with them what they missed at the morning meeting.

Parent Involvement Plan for the Beginning of the School Year

Once a good foundation has been set the first day of school, it is important to continue the effort to communicate regularly with parents. The following are some ideas for promoting positive home-school connections during the first few weeks of school.

Regular Classroom Visits.

Parents should feel welcome to come and observe their child's class. Parents need to understand that the teacher will not have time to stop teaching and chat with the parent, however. Rather, the parents should quietly enter the room and observe unobtrusively in the back of the room until the teacher has a free moment to greet them.

If the teacher is uncomfortable having parents visit during class, it is important to offer alternative times to stop by. Parents can come before school or after class, preferably as the children are being dismissed (so no one has to wait around after school). This is a good time to address questions, comments, and concerns. If parents are made to feel they and the teacher are partners in their child's education, it is much easier to address concerns that come up as the school year progresses.

Classroom Management Plan.

Some time between the first day of school and Back-to-School night, it is important to send a letter out to the parents explaining the classroom management plan. This plan should include a list of the class and school rules, an explanation of the reward system (if any), and examples of the logical consequences the children should expect to receive should they break a rule. Parents should read the letter, then sign and return a tear-off portion to the teacher. The letter should explain that questions and concerns regarding the discipline plan will be addressed at Back-to-School night. If parents have a pressing concern, the teacher can meet with them individually as needed.

Weekly Newsletters

Weekly newsletters are a good way to establish and maintain communication with parents throughout the school year. The newsletters can serve to remind parents of important upcoming events, such as Back-to-School night. These newsletters are also an opportunity to let parents know what the children are learning in class each week. They should include brief explanations of the math, science, social studies units the students will be studying for the week. The newsletters can also include a list of the books the students are reading during language arts.

Weekly Homework Packets

Weekly homework packets contain an entire week's worth of independent and cooperative (with parents, caregivers, or siblings) home learning assignments. These packets are distributed at the beginning of the week and turned in at the end of the week. It is easier and less consuming of class time to distribute and collect students' homework on weekly, rather than daily. It is the children's responsibility to decide how many pages to complete each night. Some children will finish the entire packet the first night. Others procrastinate until Thursday evening. Either way, it helps children learn time management skills. It is also important to include a sheet for the children to log the books they read with the parents each night.

Back-to-School Night

A few days before this event, it is important to call parents and send home invitations to let them know they are expected to attend. Although most schools provide a two- or three-hour window of time for parents to trickle in to this event, it is a better idea to tell parents to come all at once. It is best to address all of the parents at the same time. Teachers should allow a half-hour for parents to arrive (the ones that come early can walk around and look at the room). The teacher can then address the entire group. Good topics to discuss include: homework; classroom management; attendance and punctuality; goals for the students' academic, social, and emotional growth for the year; a typical day's schedule; and the teacher's personal philosophy of teaching and learning. The parents can then ask questions or make comments. After, it is nice to have light refreshments available, such as punch and cookies. Independent play materials should be available so students (and their siblings) who attend can keep busy.

Puzzles, games, blocks, books, and coloring activities are good choices, because they are open-ended and require little direction by the teacher.

In addition to describing your program for the year, Back-to-School night is an excellent time to begin in-servicing parents on the importance of parent-child interaction at home. Teachers can begin at this time to provide parents with information on the role they play in their children's learning. Teachers can also suggest appropriate learning experiences for development in literacy, math, and science. Before giving examples of such activities, it is necessary to describe ways to improve home-school connections through increased parent-teacher communication throughout the year.

Improving Parent-Teacher Communication throughout the Year

By taking measures to foster positive parent-teacher relations during the first weeks of school, an important foundation is laid for the year ahead. It is important to have a plan for the remainder of the year in order to build and maintain strong home-school connections. According to Rich (1996), constant communication between parents, teachers, and students is essential in order for children to reach their potential. One excellent way to accomplish this is to implement the use of home response journals.

Home Response Journals

Lazar and Weisberg (1996) described the enormous potential of parent-teacher partnerships to positively affect student outcomes. They advocated the use of home response (HR) journals to increase reciprocal communication between teachers and parents, thus supporting students' literacy development at home and at school. HR journals are sent home to parents at the beginning of the school year as a way to initiate an on-going dialog between parent and teacher. Teachers might write a paragraph or two each week. Possible topics include: how the particular child is doing in class, what the class is studying that week, or specific anecdotes about their child. Parents are then encouraged to respond—voicing concerns, describing the child's learning experiences at home, asking questions, or offering other relevant information. This dialog continues the entire school year, and the written conversations reflect the on-going needs and concerns of the parents and teachers.

Lazar and Weisberg described the importance of valuing and actively eliciting parents' input. HR journals are an excellent way to accomplish this. HR journals allow parents to be collaborators with teachers, rather than outsiders to the educational process. Ordinarily, parents are the recipients of information from teachers and schools. Many parent involvement programs focus on "teaching" and informing parents. Often such programs provide the parents with lists of activities to try at home. Unfortunately, many of these activities are not individualized to the needs of the students and parents. HR journals are tailored to fit the family's particular circumstances and needs. .

HR journals are beneficial to parents, teachers, and students. They allow parents and teachers to achieve mutual understanding of both home and school culture. This is extremely important given the diverse nature of most schools and communities, and the fact that, many times, the cultures of the teacher and students differ. HR journals allow teachers the opportunity to respond individually to parents concerns and questions. They allow teachers and parents to share their personal philosophies of teaching and learning, which may differ.

HR journals are also an excellent way for teachers to learn about their students outside of school. Parents can share insights about their children that can be invaluable to the classroom teacher. At the same time, teachers can share positive information about the progress of the students, helping the parents to see their children's strengths, and reassuring them that their child is progressing. This helps to build confidence in both the parents and students, and creates a positive atmosphere in which teachers can provide suggestions to help the students at home. It is important to build a trusting relationship between teacher and parent before teachers make recommendations to parents.

Home Visits

Another excellent way for teachers to build strong home-school connections is through home visits. Gonzalez et al. (1995) found home visits to be a powerful means for teachers to identify the "funds of knowledge" (social and intellectual resources) that exist in working-class minority students' homes. They found parents' and teachers' attitudes could be improved if teachers enter students' homes for the express purpose of learning about the students and their families and promoting positive relations. They found such home visits to have many positive effects: parents began to view themselves as change agents in their children's education; parents felt an increased access to schools; teachers and students had stronger relationships; and teachers used the students' funds of knowledge as bases for curricular units.

Some cautions and concerns must be addressed with regard to home visits, however. For safety reasons, some schools may require that teachers visit student's home in pairs. Teachers should conduct the visits during daylight hours and should inform the school as to when and where they will be visiting. Also, some parents may feel uneasy about inviting teachers into their homes. They may be embarrassed about the home, or may just prefer not to have the teacher visit there. Teachers should take this into consideration and not expect to be able to visit all parents' homes. One alternative may be to meet for coffee at a local restaurant instead. The main idea is to get to know the parents better and begin to build a relationship with them.

Teachers who foster positive two-way communication with parents through home response journals, face-to-face contact, phone calls, letters, and home visits are in a good position to invite parents to come to informal parent education classes. Such classes are an excellent way to inform parents and encourage them to increase positive parent-child communication at home.

Parent Education Classes

Strong home-school connections helps maintain open lines of communication between teachers and parents; allows teachers learn more about the students; helps teachers gain an understanding of the students' cultures and home lives; and builds stronger relationships between teachers and parents. Another goal that is often overlooked is parent education. Very few parent education programs exist, although this idea is becoming more and more popular as individual teachers and whole schools plan and implement events such as family math and science nights. These curricular areas are often chosen because they provide many opportunities for parents and students to engage in fun, educational, hands-on, constructivist-based activities. Unfortunately, not every school has such events in place. It is often up to individual teachers to plan and implement such programs. This is not an easy task to accomplish, given the strain on teachers' resources of time, money, and materials. Although math and science nights are a great idea, and are very effective, they often occur only once or twice a year. Ideally, parent education should occur more often, perhaps monthly or weekly.

Webb (1997) described a university and public school collaborative parent education program in which parents participated in weekly parent-child classes with their children from the time they were born until age four. Although this program was designed for infants and toddlers, the format can be adapted to fit the needs of primary teachers. The following is an adaptation of the format Webb suggested in her article, modified to include the subject areas of science, math, and literacy, in addition to language development. It is appropriate for use with elementary children and their younger siblings.

Each class session should be approximately one-and-a-half hours in length, divided into three half-hour components. The first component is a free play segment in which the children and parents work together. The teacher introduces one simple math or science learning activity per session, such as sand or water play. The purpose of the free play segment is to promote positive parent-child interaction (e.g. play, talk, cooperation), enhance the children's self-esteem, build parental confidence in the abilities of their children, demonstrate how to structure an appropriate learning environment, and help parents understand how children learn. During this time, the teacher circulates throughout the room, talking with parents and demonstrating their role in the exploration/discovery learning process of the children. The teacher models asking the children questions that facilitate learning without interfering with the children's self-initiated discovery. This is also a good time to address parents' questions and concerns.

During the second component, the teacher invites the class to participate in literacy and language learning experiences designed to promote positive interaction between the parents and their children. This may include leading the group in songs, finger plays, or shared book reading. This segment can include a short snack period, if desired.

The third component is dedicated to parent education, including a discussion and make-it/take-it workshop. The children resume playing with the day's materials while the teacher and parents discuss a topic identified as useful at the previous class meeting. Thus the teacher and participants collaboratively plan the curriculum, based on the evolving needs of the children and parents. This is an excellent example of two-way communication and involving the parents as partners. Topics for discussion might include: sibling rivalry, how children learn to read, how to identify age- and developmentally-appropriate books, how children learn language, how children learn math and science concepts, and how parents can support children's emotional and social development. The teacher need not have all the answers; this is a discussion between the participants, all of whom have valuable insights and experience to contribute. The teacher might prepare for the class session in advance, however, by reading and making copies of articles relevant to the topic up for discussion. During the discussion, the parents use inexpensive materials to make a book or an educational toy to take home. Some examples include picture, texture, pop-up or predictable books; push-pull toys; water and sand toys; puppets; and math manipulatives, such as games or counters. This make-it/take-it component is important because it helps parents see they can provide educational materials for their children even if the family is not affluent.

In addition to a structured parent education program, there are many other ways for teachers to encourage and promote positive parent-child interactions at home. The next chapter describes ways teachers can increase student learning at home. Teachers can kick their current homework program "up a notch" by using these ideas to develop a home learning program for their students.

Chapter Two

Encouraging Positive Parent-Child Interaction at Home

This chapter is designed for elementary teachers interested in helping parents improve the quality of parent-child interactions at home in order to promote student literacy, math, and science learning. These ideas can easily be incorporated into a teacher's existing home learning (homework) program. Teachers can use these ideas to help make connections between home and school, and promote positive parent-child interaction at home in the areas of literacy, math, and science.

Home Learning, More than Just Homework

The learning experiences detailed in this section lend themselves to a weekly commitment on the parents' part to work with their children at home. Teachers can start by asking parents to work with their children fifteen minutes per evening. At first, teachers can help motivate parents by making these activities part of the students' regular homework assignments. Later, as parents begin to see the benefits of working with their children at home, they will hopefully begin to do these types of activities whether or not the teacher requires it.

Activity Bags

In addition to the sharing of home materials at school, a flow of materials from school to home is essential to promote learning at home in all subject areas.

Math manipulatives are a natural for promoting home learning experiences. Teachers can send home bags of interlocking cubes, pattern blocks, dice, puzzles, counters, or play money. The list of possibilities is virtually endless. Large, sturdy, resealable plastic bags, such as gallon-size freezer bags, work especially well and are durable. Each bag should include brief and basic instructions for activities parents and children can do together at home. It is not necessary, however, to have structured activities. Rather, the directions can simply encourage "playing" and exploration of the materials, as this too leads to constructive learning of mathematics (Anderson, 1998).

The learning of virtually all subject areas can be enhanced through sending materials home in activity bags (see Appendix for sample activity bag learning sheets). Building materials, such as Legos, wooden blocks, tinker toys, and Lincoln logs are great for encouraging constructive play and enhancing children's social skills. Crayons, markers, colored pencils, paints, paper, scissors, chalk, and paste can be sent home for art. Dolls, play kitchen, and workbench materials encourage dramatic and pretend play.

Teachers can encourage literacy development, regardless of the subject area covered, by including a response journal in each activity bag. Students should record their name and the date, along with a drawing and a written description of what they and their parents did together. Depending on the grade and developmental level of the children, students' writing might include scribbles, random letters, a few words, one or two sentences, one paragraph, or several paragraphs. Parents can participate in the journal by signing the page, dictating the children's sentences, or writing a few sentences of their own. This encourages parent involvement and helps document that the children and parents worked together using the given set of materials.

While it is easier for teachers if parents write in the journals in English, some parents may feel more comfortable responding in their primary language. In this case, it is a good idea to encourage parents to write in the language they prefer. This may mean the teacher must have the words translated by a teacher's aide, another parent, or a colleague. Or, if the teacher is somewhat proficient in the language, he or she can piece the messages together. Sometimes the students themselves can read in their primary language, and can serve as translators in this case. Regardless, encouraging parents to write in the language they are most comfortable with promotes, rather than discourages, parent participation.

Of course, when sending materials home with students, monetary considerations, replenishment, and loss are going to be issues. As far as material resources, there are many ways to acquire the materials needed for the activity bags. Obviously, teachers can purchase the materials themselves. Teachers notoriously spend a good amount of their own money each year on their students, so this is not a far-fetched idea. Perhaps a little money can be spent each year on this program until gradually, the teacher has built up a collection of activity bag materials. However, it is not necessary for teachers to spend their own money to implement such a program. There are other ways to acquire the materials. One way is to request donations (of materials) from the parents. Some parents are glad to purchase materials such as paper cups, craft sticks, bags of dried beans or macaroni, paper clips, or chenille stems. Others can help by contributing empty milk cartons or plastic soda bottles, or scraps of yarn or fabric. Some parents have access to free or inexpensive materials through their work, like seeds, paper, or pens.

Another way to acquire needed materials is through donations from companies. Many local chain stores and businesses have an allotment they can spend each year on neighborhood charitable contributions. Some businesses donate money; others donate goods. Often times all it takes is a few minutes speaking to the owner or manager of a business and a written letter of request to receive such donations.

Grants are another way to access monetary resources for the activity bags. Businesses, districts, schools, and the government offer grants. Many times requests for grant proposals are published on school message boards in the office or teacher's lounge. Individual schools sometimes offer "mini grants" in small amounts ($50 - $200) to their teachers. District, business, and government grants can go into thousands of dollars range. The internet is another potential source for grant information.

As far as loss of or damage to materials, a good plan, consistently followed, helps minimize loss of and damage to materials. It is a good idea to set some rules about the use of materials. One important rule might be that the children may not check out a new bag of materials until they return what they have already checked out. Most children will be careful with the materials and conscientious about returning them promptly, because they want to check out something else. It is also good to have a system of check-out cards with the children's names on them. Just before the dismissal bell, students can write the date and the item(s) they are checking out on their card. Students can show the teacher their card and then put the card back into a pocket chart. Students can check the materials back in in the morning, perhaps with the help of a class monitor. Students cross off the items they are returning and show the card to the monitor or teacher. This process may seem complicated, but students quickly catch on and are eager to follow the rules so that everyone can enjoy the materials.

Occasionally, items from the activity bags do get lost or misplaced. In that case, it is important to have spare materials for replenishment. Some loss of materials is to be expected. However, the benefits of lending materials out to students far outweigh the disadvantages.

Book Bags

Book bags are an alternative version of the activity bags related specifically to good children's literature. The teacher places one copy of an exceptional picture book along with a related activity into a large plastic freezer bag. Students may take one book bag home per week, to be returned on Friday. Some suggested activities include: directions and materials to make hand or stick puppets, a game, an art activity and materials, a prompt and some paper for a story extender, or a commercially-made doll or puppet. As with the activity bags, included in the book bags are a parent-child response journal in which the pair records the date, their names, a drawing, and some sort of written explanation (student-written or parent-dictated) indicating the interaction between parent and child that took place.

Experience Excursions

Most parents and children take their children on excursions that range from simple and inexpensive (walks around the block, trips to the local park, cooking at home) to elaborate and costly (vacations, musicals, plays, or concerts). Or they can fall somewhere in-between (trips to the zoo or museum). Classroom teachers can capitalize on and elaborate upon these experiences by encouraging children to report on such events in class. They can also offer parents suggestions to encourage a focus on learning during such experiences. Teachers can provide guiding questions for parents to ask their children; ideas of places to go; and suggestions of math and science skills, such as observation, counting, sorting, and classifying, that can be used during the excursions (Kokoski & Downing-Leffler, 1995).

Library Cards

It is very important that teachers encourage all students to 1) obtain a library card, 2) check out books regularly with the help of their parents, and 3) read the library books with parents, siblings, caregivers, and other relatives. Teachers can plan a walking field trip with the students and their parents at the beginning of the school year to tour the library, check out books, and obtain library cards. Many parents are not aware of the free programs and services available through their local public library. Most libraries have wonderful children's sections, complete with child-sized bookshelves, tables, and chairs. Many public libraries have computer and internet access available to students, as well. There are also summer reading programs, offering incentives to children who read regularly; and story hours in which high school students or senior citizens read to groups of children on a regular basis. Visiting the library can be a fun way for families to spend time together for educational purposes.

Materials from Home

As stated in the previous section, a good way to support children's math learning at home is to encourage a flow of materials from home to school. Children can bring items from home, such as rocks, stuffed animals, beanbag dolls, and buttons, to make class collections that correspond to what is being studied in class. Sharing of learning materials in this way helps establish links between school and home, making the distinction between "home-like" and "school-like" become less clear (Anderson, 1998).

Sharing of home materials does not have to be limited to mathematics instruction. Teachers can support children's development at home in other areas by encouraging students to bring materials to class that correspond with other units the class is studying. For example, for language arts, children can bring favorite books from home to read to the entire class. This is a twist on "author's chair" (an activity in which children read a story they have written or share a picture they have drawn with the class). Such an activity might be called, "reader's chair". There are also many materials children can bring in to enhance science or social studies units. When studying plants for science, for example, children can contribute seeds, milk cartons (for pots), and gardening equipment (watering cans, trowels). When studying families for social studies, children can bring in pictures of their parents, siblings, and other relatives.

Sharing materials from home validates children in many ways and enhances their learning at school. A student's home life is an amalgamation of many things, including culture, language, family, values, and experiences, that can be represented through the materials contributed to the class. Students take pride in what they offer to the class collections. Parents can see how everyday materials are necessary and useful in promoting learning at home and at school. Teachers can draw on the students' personal experiences and prior knowledge by encouraging home to school sharing of materials.

Math/Science Backpacks

Using math or science backpacks is a great opportunity for teachers to connect learning at home with what the students are learning at school. Each backpack is a self-contained educational packet containing all the materials needed for parents and children to complete a math or science activity. The backpacks should contain directions, reading materials (e.g. a picture book), writing and/or drawing materials, creative play materials, and manipulatives. Examples of math backpack activities include graphing activities, addition or subtraction games, and measurement activities. Manipulatives include dice, counters, and interlocking cubes. Each backpack contains a journal, so parents and children can record their names, the date, a drawing, and sentences explaining what was accomplished. Teachers can pass out backpacks at the beginning of the week and have the students return them on Friday or give each student one night to complete the activity. When they return the backpacks, students should be encouraged to share in class, reporting to the other students what they did, with whom, and how successful the activity was. Backpack activities can be very beneficial for parents, students, and teachers because they: 1) help familiarize parents with the teacher's philosophy of teaching and learning, as well as classroom teaching methods; 2) give children the opportunity to demonstrate understandings and competencies to their parents; 3) promote parent-child interactions through investigative activities; 4) help children learn content and develop process skills; and 5) promote positive student attitudes toward science and math (Hartog, Diamantis, & Brosnan, 1998; Kokoski & Downing-Leffler, 1995).

Mini-Museums

Mini-museums are one way to make a connection between school and home for math and science learning (Kokoski & Downing-Leffler, 1995). In this activity, children are asked to work with their parents to gather a collection of five or more items that relate to a unit or topic the class is studying at school. The teacher sends a letter home to the parents explaining the activity: its goal, the procedure, and how it relates to what is being studied at school. Teachers can also send task cards containing examples of ways the children can work with the collection at home. Students complete their collections, then bring their mini-museums to school on a given due date. Students should share their collections with the class, then the teacher can display the mini-museums to be used for further study and class discussions. The class can work with the total collection by graphing, sorting, and classifying the items brought in by the entire group. One example of a mini-museum topic is "apple". An apple mini-museum may contain items such as several varieties of real apples, apple seeds, applesauce, apple juice, or an apple blossom. In this case, the teacher can use the mini-museums to reinforce science concepts learned in class, such as parts of plants, plant reproduction, and attributes of plants.

Parent-Child Reading Program

Many schools have some sort of a reading incentive program in which the students read a predetermined number of books and then earn prizes like bookmarks or stickers. These programs are a great idea, but to be truly effective, several conditions must be met. First, the teacher must be very supportive of such a program (e.g. encouraging the students, reminding students to read regularly, and checking to see that they actually read the books). Students will not be motivated if their teacher is not. Second, the students must have access to a variety of interesting books at their reading level. Children enjoy bringing books home from school to read with their parents, older and younger siblings, baby-sitters, and other relatives. Unfortunately, some schools do not allow the students to take books checked out from the school library home, for fear the books will be lost. In addition, students probably only check out about two books every two weeks, not allowing much variety during that period. For these reasons, it is a good idea for teachers to have a large collection of inexpensive picture books for the children to read during class time and to take home to read with their parents. Teachers should make sure that a variety of reading levels is available for the students to choose from. Last, extrinsic rewards, such as award certificates and prizes help motivate students, especially when the program is first implemented. The prizes should encourage further reading. For example, bookmarks and inexpensive children's books are a better choice than stickers, pencils, or toys.

Reading each night with an adult can easily be made part of the students' normal homework routine. A single sheet of paper attached to the front of a weekly homework packet can serve as a way for students to record the title and author of the books they read, who they read with or to, and parent's signature.

In addition, students can use a simple rating system to indicate whether or not they liked the book's story and illustrations.

Toy Library

Especially for teachers who work in low-income areas, it is a nice idea to have a toy library available to the students. The toy library can contain dolls, blocks, Legos, Tinker Toys, Lincoln Logs, play dough and tools, games, puzzles. Some children do not have access to such materials at home. The lending out of the toys works the same way as with the books. There should be a check-out system with a class pocket chart and a card for each student. Children may check out a new toy once they have returned what they already checked out. Teachers can lend out toys on a weekly or daily basis. It helps to use large resealable plastic bags to hold the toys and include a laminated list of the contents (e.g. number of puzzle pieces or blocks).

TV-Free Activity Program

Brooks, Bruno, and Burns (1997) created a program called "Pull the Plug TV-Free Activities" for promoting family interaction. This program encouraged children to turn off the TV at least once a week (for twenty to thirty minutes at a time) and participate in a learning activity with their parents, such as reading, talking, or playing games. The authors found their TV free program increased time students spent on educational activities and decreased time spent on noneducational activities (e.g. watching TV, playing computer games, playing Nintendo). Students who participated were entered in a monthly raffle for prizes that promote TV-Free choices (paints, crayons, play dough, markers, paper). Students who participated four times per month earned a certificate. Such a program can be implemented in an elementary classroom fairly easily by: 1) sending home a parent letter explaining the program, 2) sending home record sheets with the students each week, 3) collecting the record sheets each week and recording the results on a class chart, and 4) awarding prizes and certificates to reinforce TV-Free choices.

Tips for Success

No matter which programs or activities a teacher chooses to use, there are some universal tips that help ensure success (adapted from Kokoski & Downing-Leffler, 1998).

1. Learning experiences should be meaningful to the students' lives. Activities should take into consideration student diversity; including interests, personality differences, and prior knowledge.
2. It is important to consider the individual needs of the students and their parents. Children come from diverse home situations. English may or may not be the primary language spoken in the home, parents' literacy and educational

levels differ, and some families have greater access to economic (money, books, transportation) and human (extended family) resources. Time constraints arising from work situations, number of children in the family, and number of parents in the home must also be considered. Some children go through traumatic events such as a death in the family, loss of a pet, or parents' divorce that may effect the quality and quantity of home learning experiences.

3. Activities should be challenging. A good rule of thumb to remember is "plus one". This means the activities should be one step beyond what the children can easily do. Parents should be encouraged to use "scaffolding" techniques with the children, rather than do the activities for them or just tell them the answers. They need to allow the children to make mistakes and help them learn from these mistakes without interfering. This helps build success into the activities, and gives children a sense of accomplishment, thus fostering positive self-esteem.
4. The activities should be enjoyable and interesting to both the children and their parents. The learning experiences should encourage cooperation and interaction between parents and children.
5. Teachers should provide all materials for the activities, including pencils, paper, and crayons. Some children do not have even basic materials at home.

6. It is a good idea, when possible, to tie in home learning experiences with what is being studied at school.
7. Teachers should use open-ended activities, and avoiding those with "one right answer".
8. Teachers should provide a reasonable amount of time for parents and children to complete the activities.
9. It is important to provide prompt, positive feedback to parents and children. This can be accomplished verbally or through written correspondence in a journal or on student record sheets. This helps motivate and encourage students and parents.
10. Teachers should provide time for students to share with the class what they did and learned at home.

Chapter Three

Home Learning Experiences

It is important for parents to understand, in a general sense, the importance of parent-child interaction at home. This chapter provides a general overview of the basics of parent-child interaction, including the importance of early literacy, math, and science experiences.

The Basics of Parent-Child Interaction

It is important for parents of all income levels to understand that children do not need an overabundance of expensive toys and learning materials to help them develop, grow, and learn. A few well-chosen items, such as blocks, crayons, and sand toys; a small library of books; and plenty of parental love, attention, and interaction can provide a strong foundation for children's learning.

Parents may not be aware of the impact they have on their children's intellectual, social, and emotional development in the early childhood years. It is important for teachers to take the time to help educate parents as to the critical nature of young children's formative years (birth to age eight). Parents need to be assured that they already do engage their children in learning activities, although on the surface these activities may seem like "play".

Literacy Development

Encouraging Reading at Home

Patience is called for in working with babies' and toddlers' emergent literacy. Parents should begin working with their children as early as possible (preferably from infancy on), in order to reap long-term benefits. Reading to a nine-month-old may seem silly to parents at first, but will pay off in the long run. Babies delight in looking at colorful picture books. They also love to chew on the pages, so sturdy board books are best. A huge home library is not necessary. A few, carefully chosen books, combined with those available at the public library, will provide a strong foundation for literacy development. Parents should try to find books with simple and understandable text, strong storylines, and pictures that match the text. Predictable books work especially well. It may be tempting to buy books featuring popular children's characters, but often these books contain little in the way of story, or have too many words per page. Parents should not be afraid to choose books with silly story lines. Even very young children can see the humor in books such as the Dr. Seuss classics.

Teachers can supplement parents' home libraries by lending books to students. Teachers can build a large library for their classroom by shopping at garage sales, thrift stores, and library sales. Many public libraries sell old children's books semi-annually, monthly, or even daily. Many five- and ten-cent books can be found at such sales. Inexpensive books such as these can be lent to students on a daily basis. If the books get lost or torn, the teacher is not out a huge sum of money. Most of the time, this is not a problem. Students are usually eager to return books promptly and undamaged, so they can check out new ones.

Another good way for teachers to help supply appropriate reading materials to their students is to have the children make their own copies of favorite books at school. The books the children are reading during language arts time are best, because what they learn in class can be reinforced at home. This is a great opportunity for teachers to provide parents with examples of materials appropriate to the age and reading level of each child.

Children love to hear the same stories over and over again, so parents can be assured that their young children will not tire of the books in a small home library (although the parents might!). In fact, having one favorite book may be an indicator of future reading success. According to Weinberger (1996), whether or not children had a favorite book at age three proved to be a significant factor for later reading book level, during elementary school years. Having a favorite book was considered to be a composite measure of early book experience, including availability of materials, parent-child interaction, and children's inclinations toward book reading.

Parents also need to be assured that there will be times in a child's life that he or she is less inclined to read. For example, many toddlers are so active that they simply cannot sit still long enough on mom or dad's lap to read a book. This is okay. One way to get around this is to read to children when they are relaxed, such as right before a nap or bedtime.

Quality of Interaction

When reading with young children, the quality of bookreading experiences is extremely important. Interaction with toddlers and preschool-age children may be especially challenging. It is important for the parent to capture the child's attention without dominating the situation or setting unrealistic expectations. Above all, the interactions should be enjoyable for all, not a time for punishment or criticism. The interaction should also be instructional. Simply reading the text verbatim to a child does not make the most of the learning experience. Parents need to be educated as to the most effective ways to read with their children (Bus et al., 1997).

Leseman and de Jong (1998) found that social-emotional, procedural, and instructional quality of parent-child interaction during bookreading experiences with preschool children influenced later reading skills (such as decoding and reading comprehension) in elementary school. Social-emotional quality refers to relationship between parent and child during bookreading. Parents need to be positive and supportive, respect the child's autonomy, scaffold (e.g. help the child be successful by helping when necessary, but allow for challenge), set limits (e.g. child may not throw the book), and have confidence in the value of reading to a child. Procedural quality refers mainly to getting the child to behave and cooperate. Instructional quality refers to behaviors parents exhibit that promote children's learning. Instructional quality can be categorized by level of parental utterance. Low level utterances include pointing, labeling, repeating text the child read, and completing sentences partially read by the child. High level utterances include explaining, evaluating, and extending the text. The older children are, the more it is possible to use higher level utterances. Labeling and pointing to pictures is a good way for parents to start working with infants and toddlers, however. Very young children best understand simple one- and two- word phrases, rather than lengthy explanations. It is important in all cases that children be allowed to participate as fully as possible, turning pages, labeling, pointing, going back to a favorite page. This allows children to have some control of the interaction. Parents should not dominate the situation. Rather, they should look toward the children for clues as to how the book sharing is going. When children become tired, hungry, or cranky, it is time to stop.

Early Writing Opportunities

Very early on, children's names become one of the most important words in their vocabularies. Whether babies can speak their name or not, through consistent hearing of their names, they learn they are being referred to by parents and others. Even the youngest babies will turn their head at the mention of their name.

As children grow older, many more opportunities arise to use names for learning. Writing the child's name soon becomes a game for a parent to play with their young toddler. Parents should be encouraged to write their child's name often, slowly writing each letter and saying each letter out loud. Good opportunities for name writing include on the sidewalk with sidewalk chalk, on the back of restaurant placemats with crayons, and on all artwork a child may create. Names do not have to be written to be practiced. Alphabet blocks, and magnetic and foam letters work well, too. Children also like to see the names of their favorite people written for them (e.g. mama, dada, papa, and baby). Even the words for their favorite things delight them (e.g. ball, star, and "baba"). Parents should start by writing words that correspond to a concrete object or a person. It is also helpful to draw a picture next to the word. At first, children will obviously not be able to read the words, but over time, they will begin to see the relationship between the spoken and written word. Parents can also write and say letters for their very young children. It is not necessary to wait to introduce children to written words. Rather, writing is a process that is interdependent with listening, speaking, and reading, and begins to develop as a child first learns to speak (Strickland, 1990). When exposed to a print-rich environment, toddlers soon begin to recognize print in their everyday surroundings. Their daily discovery of grown-ups' symbols is very exciting to them.

Teachers need to convey to parents the importance of valuing young children's scribbles, pictures, and strings of letters as an important step in the road to conventional writing. Some words and letters will be easier than others for children to learn, especially if groundwork has been laid during the early years. Often the first letter a child learns to write is the first letter of their name (Schickedanz, 1999). Given many previous experiences watching a parent write her name, a young child will eagerly learn to write her own name herself.

Cognitive Skills

According to McMullen (1998), infants' and toddlers' thought is a sensorimotor activity, nearly simultaneous with their actions. Unlike older children and adults, they are open books—you can "see" them thinking. Babies soon learn that words represent objects and people: "mama" is a symbol for mother, "baba" stands for bottle. As children approach the age of two they become capable of higher level symbolic thinking that allows them to remember people and things, think before they act, and represent objects in their minds. It is during this time, before they can read or write, that children begin to develop the understanding that symbols (such as letters and numbers) represent something else. Indeed, children's use of symbols becomes increasingly sophisticated from infancy until the time they begin to read and write conventionally. Self-directed symbolic thinking activities such as block and dramatic play, scribbling, painting, drawing, talking, listening, and looking at print materials (books, magazines, letters, etc.), are all necessary to lay the groundwork for conventional reading and writing. Older children should be encouraged to retell stories, use pictures to tell a story, write random letters, and use developmental spelling, in order to promote their literacy development.

Oral Language Development and Listening Skills

Talk should not be discounted as an important opportunity for continual language and literacy development. Parents must understand that they need to talk to their children from the time they are born. Again, this may seem silly to some at first. Obviously, a baby cannot understand the literal meaning of individual words. However, tone of voice, facial expressions, and gestures help convey meaning. Soon infants begin to understand much more than parents may realize. Several studies have shown that positive discourse beginning at a young age, (responding to children's questions, verbally guiding children, affirming children, and using a diverse vocabulary), leads to larger vocabularies and higher IQs (Bower, 1996). Most parents, especially mothers, naturally adopt what is known as "parentese" in talking with their infants and toddlers. When speaking parentese, adults use a high-pitched voice, short phrases, eye movements, gestures, and proximity to convey meaning. They also speak in a singsong fashion, accentuating vowel sounds. Parentese can be likened to the choice morsels of food a mother bird feeds to her hatchlings. Regardless of language, it is this special dialect that helps babies learn to speak (Nash, 1997).

Even as children get older, the need for continual parent-child discourse continues.

Science Development

According to Piaget, children's intellectual development is built upon a foundation of physical knowledge. Beginning at birth, children construct physical knowledge by manipulating objects in the world around them. They use their five senses to learn about the properties of objects and how their actions affect objects. Eventually children establish relationships between and among objects. They achieve the ability to compare, classify, sort, and order objects. Appropriate science experiences help children construct knowledge and learn about the world around them (Smith, 1987).

Early science experiences should be informal and child-directed. When children actively explore carefully selected materials, learning is purposeful rather than aimless (Iatridis, 1981). Children should be allowed numerous opportunities to play with science materials over time.

Math Development

In addition to laying a foundation for later science learning, the physical knowledge children create by manipulating objects in the world around them also helps children develop a preliminary understanding of mathematics. Mathematical ideas begin to form early when young children are provided with many concrete, active learning experiences over time. Children use their prior knowledge to interpret new learning experiences, sharpen problem-solving skills, and make discoveries. The learning experiences should be hands-on and meaningful and occur in a natural way. Examples include block play, sorting and classifying objects, investigating plants, and singing to music (Lozano & Medearis, 1997).

Chapter Four

Parent-Child Activities

In addition to general information about children's learning, parents need concrete and specific suggestions as to how to help their children in the areas of literacy, math, and science development. Telling a parent to "take your child to the library" is too vague to be of any real value. This chapter describes simple and inexpensive learning experiences parents can provide for their children. This list is by no means exhaustive. It is merely a starting point for teachers interested in improving student learning through parent-child interaction at home. Each activity lists the general subject areas, skills, and concepts covered; the rationale for doing the activity; and describes appropriate activities depending on the age of the child. The ages are divided as follows: "infant" refers to children ages birth to one year; "toddler" refers to one- and two-year old children; "preschool" refers to three- and four-year old children; and "primary" refers to elementary school students, ages five to eight.

The ideas presented in this chapter can be used in a planned, formal way, as part of a parent education program; at discussions at school-sponsored events such as parent-teacher conferences, Back-to-School night, or Open House; or during home visits. It is also possible to use the ideas from this section to help inform, educate, and collaborate with parents in a more spontaneous and informal way, as need arises. The topic of how to help children at home often comes up when meeting with parents after school, when discussing progress reports, or during telephone calls to parents. Parents may actively solicit advice from the teacher or the teacher may take it upon him- or herself to make suggestions to the parents. Either way, the learning experiences and activities are designed to help families enrich the home learning environment, improve parent-child interaction, and make the most of the each child's potential to learn.

Although this is a handbook designed for elementary school teachers, activities for very young children (birth to preschool) are included is because it is the author's hope that as parents begin to help their elementary-aged children at home, they will begin to see the value in starting early and helping the younger siblings at home, as well.

All of the songs referenced in this section can be found in the appendix.

ABCs

Subject Areas and Skills Learned

Oral and written language development and literacy.

Rationale

Although the alphabet must be memorized by rote, children can be introduced to letters and sounds in natural, fun, and meaningful ways. It is important that children know the basics of the alphabet, including the order and names of the alphabet, before they enter school.

Experiences/Activities

Infant. Parents can begin early by singing the alphabet song, as well as other songs about the alphabet to their children. One very entertaining song is the "Vowel Song (Apples and Bananas)". Parents can also make up songs emphasizing letters and sounds. Parents can provide ABC blocks for baby to play with and books featuring ABCs.

Toddler. There are a variety of materials available to heighten a toddler's awareness of the letters and words in the environment. They enjoy playing with plastic, foam, sponge, and magnetic letters. Eventually they begin to recognize these symbols, pointing letters out in the environment or perhaps naming them.

Preschool. Older children enjoy using stamps and stamp pads to make artwork. They can use alphabet stamps to decorate paper. Eventually, they will begin to write messages with the stamps.

Primary. School-aged children should be encouraged to memorize the names of the letters, the order of the alphabet, and the sounds that correspond to the letters. These skills are best practiced in meaningful ways: through singing songs, making up rhymes, reading books, and being read to.

Recommended for Further Reading

Berenstain, S. & Berenstain, J. (1971). The Berenstain's B book. New York, NY: Random House, Inc.

Geisel, T. S. (1963). Dr. Seuss's ABC. New York, NY: Random House, Inc.

Art

Subject Areas and Skills Learned

Science, math, language development, physical skills, and visual arts.

Rationale

There is much more to creating artwork than meets the eye. There are many science and math concepts that can be learned through painting and drawing. Color awareness is developed at an early age through a wide variety of experiences with color (Iatridis, 1981a). Artwork can serve as a starting point for literacy activities, such as writing stories and labeling pictures. Making artwork is a form of creative expression that allows children to vent emotions, such as joy and anger; recall important events, such as special trips; and share love with others, as they create treasures for their parents, grandparents, and friends.

Experiences/Activities

Infant. Babies can begin finger-painting as soon as they can sit up in a high chair. It is a good idea to start first with edible fingerpaints, such as pudding, frosting, gelatin, yogurt, or whipped cream. Parents can place a small amount of edible fingerpaint on the tray of baby's high chair. Baby will squish, feel, taste, and spread the paint all over the tray. Ultimately, some of the substance will end up in baby's hair, on baby's face, on baby's clothes, and on the floor. This a messy, but important tactile activity for infants to participate in.

If parents wish to have a permanent record of baby's artwork, they can buy or make real fingerpaint. Infants will eat some of the paint, but as long as it is non-toxic, it does not matter. Babies love to squish their hands in blobs of fingerpaint, and swirl the paint all over the paper. At this point, it is a good idea for parents to start with one color at a time, and apply a blob of paint directly on the paper. Parents can make keepsakes to save or give away as gifts by dipping baby's hands and feet in paint and making prints on paper or T-shirts. Several books, including *Baby Games* (Martin, 1988) and *Creative Resources for the Early Childhood Classroom* (Herr & Libby, 1995), provide several good fingerpaint recipes.

Babies also love to play with crayons. At first, babies will put crayons in their mouths, but eventually they begin to make scribbles on paper. Parents should chose large, washable, non-toxic crayons. This is a case in which spending a little extra money for a better brand is a good idea. Some of the cheaper brands have been found to contain lead. Also, cheap brands do not color as well.

Toddler. Toddlers are very creative and love to make artwork using markers, crayons, chalk, and watercolor, tempera, and fingerpaint.

Toddlers love to fingerpaint. Parents can apply two or three blobs of different colored paint directly on the paper and allow children to mix the colors themselves. This is a good way to lay a foundation for later understanding of concepts such as primary and secondary colors. Parents can also show toddlers how make finger, thumb, and handprints.

Toddlers enjoy using crayons to draw, scribble, and explore color. Large crayons are best for small hands, and do not break easily. Children should be given

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plain and lined paper to draw on as well as coloring book pages. At this point children have no idea what colors things like trees or dogs or the sky should be. They just use whatever color suits their fancy and usually ignore the lines.

Toddlers also enjoy writing with chalk on the sidewalk, concrete patios, paper, and small chalkboards. This is another opportunity for parents to write the child's name, as well as words for other things, like ball, baby, and cat.

Parents can begin naming colors when children are toddlers. This should be done in a very casual way. For example, if the child knows the word, "ball", the parent can ask the child to go get the "blue ball".

Toddlers can also begin to build hand-eye coordination by stringing dried pasta on shoelaces (Martin, 1988). Dried pasta comes in many different shapes and sizes. Because of the choking hazard, parents should supervise this activity at all times and be sure that the children (or their younger siblings) do not attempt to put the pasta in their mouths. Children can make necklaces or bracelets, or just string the "beads" over and over again on the laces. Parents can dye the pasta by shaking the noodles together with a few drops of food coloring in a large resealable plastic bag, then drying the pasta on a paper towel. As children develop more knowledge of mathematical concepts such as patterning, they will begin to string the pasta in patterns of different colors and shapes.

As children get older, they become more purposeful in their artwork. At first, children seem to scribble randomly. Toddlers can be introduced to different painting techniques, like sponge painting. Parents can show children how to carefully dip sponges into paint and make a print on the paper. Animal-, letter-, and number-shaped sponges add another dimension to sponge painting. A similar effect can be achieved using plastic cookie cutters to make prints.

Children at this age also enjoy having their hands and feet traced onto paper. The children can then color or paint in the outlined images. Parents can also have children lay down on large sheets of paper, then trace around the children to make an outline of their entire body. Parents can draw in details, such as the features of the face and clothing and have the children color or paint themselves in. Older children (preschool and elementary) also enjoy this activity and can take a larger part in the process.

Parents can help toddlers improve their fine motor skills by making sewing cards for their children (see Appendix for patterns). Parents can cut familiar shapes out of heavy, colored construction paper and have the shapes laminated at a local copy store. Parents then can punch holes in the cards and provide shoelaces with which to "sew" the cards.

Preschool. Preschool children begin to learn color names and can get even more out of mixing primary colors. Children should be allowed to experiment with mixing colors, making browns and blacks, as well as the secondary colors orange, green, and purple. They need to have several such experiences over a period of time, using many different materials (Iatridis, 1981a). Some examples of good materials include: mixing tempera paints with a brush, mixing finger paints with the fingers, using eye droppers to add food coloring to small cups of water, painting with watercolors, and dyeing Easter eggs.

Parents can give children leftover unused Christmas cards, as well as ones that were received during the season, rather than throwing them away. Children can use the cards to make collages or other artwork, cutting pictures and messages from the cards and gluing them to paper. Other greeting cards, from birthdays or holidays can be used in the same way. A family might receive a dozen or more cards from such occasions and not know what to do with them. This is also a good way to teach children at an early age about the importance of recycling.

Allowing children to dip sticks of colored chalk into small cups of water or buttermilk, then drawing on white or colored construction or drawing paper can enhance chalk art. Water or buttermilk can also be brushed directly onto paper, then children can use to chalk to draw on the wet paper. Parents can encourage children to draw with chalk on dry paper as well and compare the difference. An alternative to this activity that will produce more vivid pictures is to dip the chalk into a mixture of water and vinegar.

Hands, feet, and fingertips make good tools for art projects as well. Parents can help children trace their hands and feet onto colored construction paper. The children then cut the images out and glue them to white paper to make traditional crafts such as Christmas reindeer and Thanksgiving turkeys (see Appendix). Children can dip their hands, feet, and fingers into tempera paint to make prints on paper. Additional drawing can transform these prints into insects, animals, and people. Parents and children can also work together to make hand- and footprints in cement stepping stones. Kits for doing this project are available at craft stores. Parents mix cement and water and pour the mixture into stepping stone molds. Children press their hands and feet into the wet cement, then decorate the stones with beads, seashells, buttons, or small rocks. A similar effect can be achieved using plaster of Paris. Such artwork makes good keepsakes and gifts, because it helps document children's growth over time.

Primary. Older children can work with color in more elaborate ways, experimenting with different mediums to achieve different effects. They can observe color intensity by coloring with crayons very lightly or putting more pressure on the paper. They can mix paint colors with white to make tints like pink and peach (Iatridis, 1981a). By using different amounts of water on a brush, children can vary the intensity of watercolors, as well. They can also create crayon-resist artwork by coloring a picture with crayons then painting over it with watercolor. This is a good opportunity to discuss why the paint absorbs into the paper in some places but not in others. In addition to painting with fingers or brushes, children can use household materials, such as cotton balls or swabs to achieve different effects.

Elementary school children can make interesting paintings using tempera paint thinned with water and straws. Children use the straws to make designs by blowing air at a spoonful of paint that has been applied directly onto a piece of paper.

In addition to any number of gifts children can make out of art materials, they can also design and decorate (with paint, crayons, markers, stickers, or stamps) wrapping paper to wrap the gifts in. Gift bags are also fun to make.

Children can take ordinary brown or white paper bags and glue shapes cut out of construction paper to the bags. Younger children can simply glue shapes cut using die-cut machines to the bags.

Plain white paper plates can be used for any number of art projects. Grocery and warehouse stores sell bulk packages of inexpensive paper plates. Thin ones with fluted edges work best for art projects because they are flimsy enough for children to cut through easily. Children can use scissors, colored construction paper, yarn, string, markers, crayons, cotton balls, wiggly eyes, and paint to make and decorate paper plate flowers, clown faces, and animal masks.

Children can make collages by gluing dried seeds, beans, or pasta to heavy paper or cardboard. These items can be dyed or painted ahead of time, or the natural colors of the items can be used.

Recommended for Further Reading

Carlson, L. (1990). Kids create! Art and craft experiences for 3- to 9-year-olds. Charlotte, VT: Williamson Publishing Co.

Carlson, L. (1992). Ecoart! Earth-friendly art and craft experiences for 3- to 9-year-olds. Charlotte, VT: Williamson Publishing Co.

Hauser, J. F. (1998). Kids' crazy concoctions: Mysterious mixtures for art and craft fun. Charlotte, VT: Williamson Publishing Co.

Press, J. (1994). The little hands art book: Exploring arts and crafts with 2- to 6-year-olds. Charlotte, VT: Williamson Publishing Co.

Press, J. (1995). The little hands big fun craft book: Creative fun for 2- to 6-year-olds. Charlotte, VT: Williamson Publishing Co.

Terzian, A. M. (1993). The kids' multicultural art book: Art and craft experiences from around the world. Charlotte, VT: Williamson Publishing Co.

Baking/Cooking

Subject Areas and Skills Learned

Oral and written language development, math, science, multicultural, social skills, art, and following directions.

Rationale

Baking and cooking is an ideal way to introduce many concepts to young children. Care must be taken that the children understand and follow basic rules for safety and cleanliness. Children's self-esteem can receive a real boost as they gain independence in performing kitchen activities.

Experiences/Activities

Infant. Even babies can participate in everyday kitchen activities! Babies enjoy being with others, rather than being left alone to play with their toys. When they can sit up on their own, they enjoy being in the kitchen, watching the flurry of activity. Children can sit in a high chair or on the floor (at a safe distance) and bang metal pots, pans, lids, and wooden spoons together to their hearts content as mom or dad prepares a meal. Parents can involve baby in this process by talking about everything that must be done to prepare the food (e.g. stirring, measuring, cutting, chopping, and turning on the oven).

Toddler. There are many simple recipes toddlers can take part in, some of which require no baking or cooking. Parents should set aside special time to let their children try ther hands at cooking (rainy days are perfect!). They should choose recipes that are simple enough and not dangerous. It's important for parents to discuss safety rules ahead of time and be prepared for a mess and some mistakes, but also to remember that this is all part of learning. On a daily basis, as they prepare the family meals, parents should talk to their children about what they are doing and allow them to help in little ways. With careful supervision, toddlers love to participate in grown-up activities, such as baking. They can stand up on a chair and help mix the ingredients. It is also important to allow children to taste the ingredients before they are added (not the eggs!). They have no idea what pure butter, sugar, salt, semi-sweet chocolate, baking powder, or flour tastes like. This is a good opportunity to investigate the different tastes similar-looking ingredients can have.

Preschool. As children get older, they can begin to see the importance of following a recipe while baking or cooking. There are several good children's cookbooks available. It is best to choose one with good illustrations and easy recipes with simple directions. It is very important that children be allowed to participate hands-on in the kitchen. Parents should allow for extra time, have plenty of paper towels ready, and be prepared to serve the food to family only. It is important that children be allowed to make mistakes and discover how this effects the outcome of the recipe.

Primary. Older children can begin to provide real help at mealtimes. They can wash fruits and vegetables, get ingredients out of the cupboard, mix ingredients, set the table, and wash dishes. These types of activities pave the way for children to be more independent and self-sufficient when they are older.

Recommended for Further Reading

Alpha-Bakery Children's Cookbook. (1997). Minneapolis, MN: General Mills.

Cobb, V. (1994). Science experiments you can eat. New York, NY: HarperCollins Publishers.

Bathtime

Subject Areas and Skills Learned

Math, science, and language development.

Rationale

Taking a bath is an everyday activity in which children can discover math and science concepts, learn new vocabulary, and practice social skills. Quality interaction with adults during this routine promotes language development.

Experiences/Activities

Infant. When babies are very small, they may not even like baths. They cannot sit up and they do not yet have the ability to play with toys in the bath. When they can sit up on their own, this can change. Many babies love the water, playing in it, splashing, grabbing toys as they float by. They also enjoy touching the water coming directly out of the faucet. Bathtime is a good time to talk to baby and sing songs. It is a natural time to name the parts of the body. A good song to sing is, "This is the Way We Wash Our Face (feet, tummy, hair, etc.)". Washcloths make good for bath toys, and can be used to observe absorption of water, to play peek-a-boo with, or to teethe on to relieve sore gums. When baby gets older, he or she can use the washcloth to help wash his or her body.

Toddler. At first toddlers may just want to chew and bang together most bath toys. They soon learn they can fill and empty all sorts of containers with water. They love to fill them up with the water from the faucet, and when the water stops, with the bathwater. Bath toys can be store bought or recycled. Some of the best bath toys are the ones that are free! Empty shampoo and bubble bath bottles work especially well. Other items from the kitchen (plastic drinking cups, straws, funnels, measuring cups, and spoons) work well, too. Another good idea is to blow bubbles to the child while he or she is in the bathtub. A few ice cubes make a good addition to bath play, as do colored bath salts and bath bubbles. Parents can give children clean sponges so they can wipe the bathtub and tiles.

Preschool/Primary. Older children should be allowed plenty of time to continue their math and science discoveries in the bath. If provided with interested materials to use, most children enjoy water play well into their upper elementary years. It may be tempting for parents to push children wash up and get out of the tub quickly, but this deprives children of enjoyable learning experiences.

Recommended for Further Reading

Tracy, T. (1999). Show me! Mexico: HarperCollins Publishers Inc.

My nose, my toes. (1995). New York, NY: Dutton Children's Books.

Beanbag Dolls

Subject Areas and Skills Learned

Science, language development, gross motor skills.

Rationale

Beanbag dolls are extremely popular, and come in all different types of popular characters and animals. The variety available allows for many possibilities as far as sorting and classifying. Children are eager to use beanbag dolls for a variety of purposes, and many have collections of these dolls with which to work.

Experiences/Activities

Infant. Babies love to hold onto beanbag dolls. They are just the right size for little hands and the beans make them easy to grip and chew on. Parents can place several beanbag dolls in a box or plastic container and let older babies (who can sit up) empty the box.

Toddler. Toddlers continue to enjoy beanbag dolls. They like to use the dolls to fill, spill, and refill containers or boxes. They also make good toys for throwing and catching. Children can increase vocabulary and language development by naming the different animals or character names.

Preschool. Children can begin to use their beanbag dolls to act out favorite or made-up stories. For example, Disney sells the whole collection of Winnie-the-Pooh beanbag dolls, which can be used to act out the stories of Pooh and his friends.

Primary. Children can practice their tossing and catching skills with beanbag dolls. Beanbags work well, because they are soft and easier to catch than a ball. For science, children can sort and classify the animals according to their attributes (winged/not winged, vertebrates/invertebrates) or type (insect, bird, mammal) (Smith, 1998).

Blocks

Subject Areas and Skills Learned

Math, science, social studies, literacy development, social skills, and physical skills.

Rationale

Blocks are an important item for free exploration. Blocks are one of the best investments parents can buy for their children. Block play is an excellent way for children to learn vocabulary (e.g. shape names), relationships, positions (e.g. under, behind), physical perspective taking (a precursor to social perspective taking), as well as many science and math concepts. Blocks are ideal for promoting social and emotional growth in young children, as they play with and side-by-side peers and adults. Blocks come in many different types, shapes, sizes, and colors, and are made out of many different types of materials (wood, plastic, cardboard). Most blocks are very durable, and withstand much mouthing, banging, and building. A parent can buy a set when their first baby is small and they will last until the last child has outgrown them when they can be donated to another family.

Experiences/Activities

Infant. Babies love to play with blocks at an early age. Babies will look at, touch, taste, smell, and manipulate blocks. They learn about the properties of blocks as they clack them together and listen to the noise they make, feel the texture of the wood or plastic they're made from, smell the distinct smell of wood or plastic, and learn about how they fit into other containers. When they are very young, they enjoy holding, mouthing, and grabbing for them. As they mature, they will begin to clack them together to listen for the sounds they make, smell them, and knock over small towers their parents make. They continue to enjoy tasting them throughout the first year, especially when they are teething.

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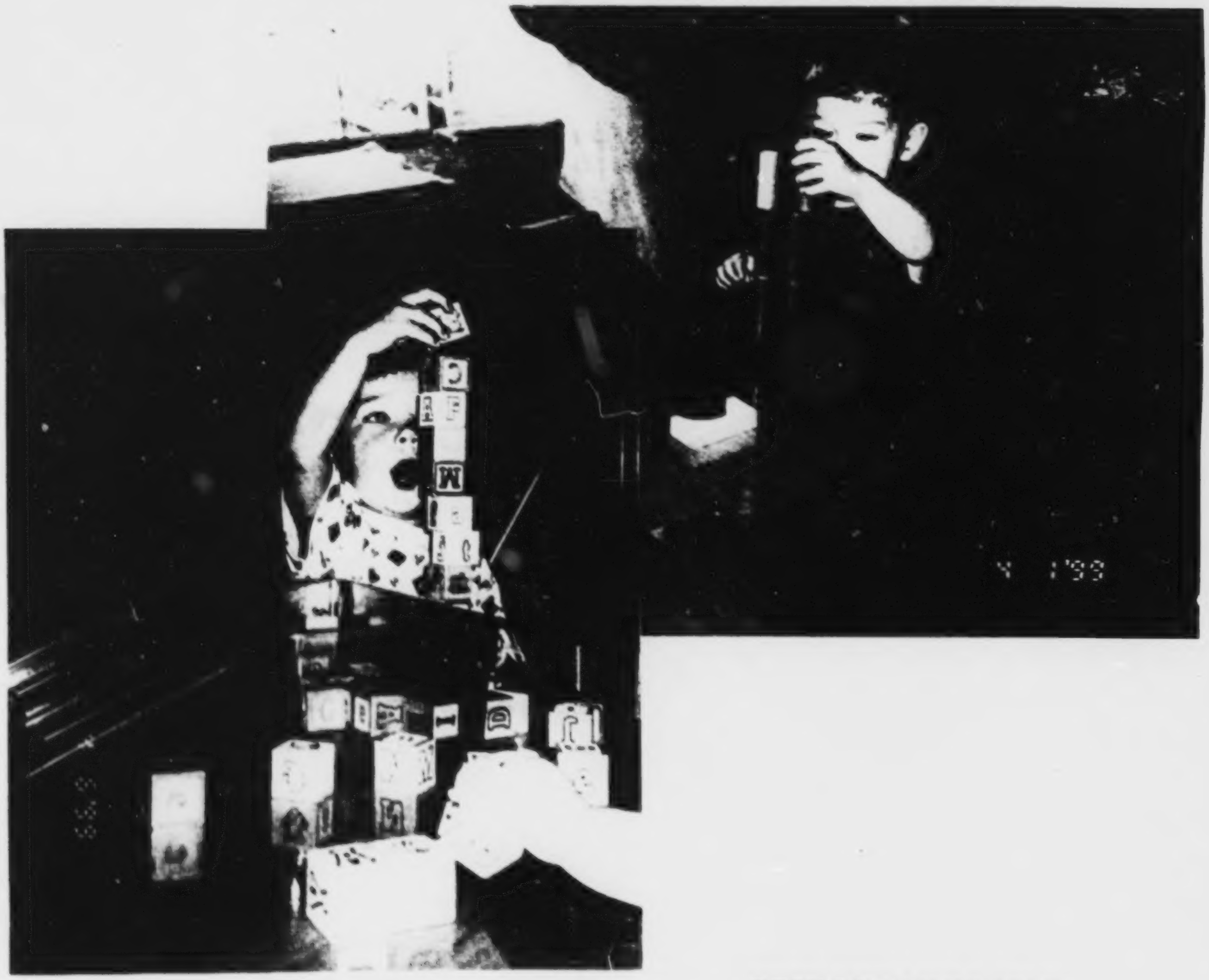
Toddler. Toddlers enjoy building small towers and knocking down stacks of blocks made by mom or dad. Many children have their first experiences with spatial reasoning and problem solving as they begin to explore with blocks (e.g. using blocks to fill and empty containers, placing a roof block across the gap between two other blocks). Play with blocks also enhances social skills, eye-hand coordination, creativity, motor skills, and helps build vocabulary (NAEYC, 1997).



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It isn't long before toddlers learn to stack blocks up in towers of two or three blocks. They continue to delight in knocking down towers other people make for them. Older toddlers can make taller towers and more elaborate structures, especially if they have blocks of different shapes to work with, like arches, rectangles, and cylinders.

AbC blocks are especially good for building tall towers. In addition to their stacking, building, filling, and spilling potential, ABC blocks also help toddlers develop language and literacy skills. Children soon become interested in the letters and pictures painted on the blocks. They enjoy naming the pictures and having their name spelled out with the letters.

Preschool. Preschool-age children begin to recognize patterns and can make designs with blocks. They begin to see their work as "works of art".

Primary. School-aged children become more creative in their block play, using their imaginations to create stories. Not only can they recreate real-life structures; they can build pretend houses, buildings, and cities. Different shaped blocks lend themselves to be used as furniture, cars, people, and animals, as children create characters and stories and play them out.

Bubbles

Subject Areas and Skills Learned

Science (air, wind, volume), language development, physical development (blowing, small motor skills).

Rationale

Playing with bubbles is a fun and inexpensive way to learn science concepts. In the early spring, bubble solution can be purchased inexpensively from many drug, grocery, and toy stores. It can also be made at home, using ordinary materials such as dish soap, water, and glycerine. Several books, such as Herr & Libby, 1995 and Hill, 1995, provide bubble solution recipes. Blowing bubbles is a great activity, indoors during bathtime, or outdoors in the backyard, park, or playground.

Experiences/Activities

Infant. From the time they are tiny, babies will track the bubbles with their eyes as they float by. As they get older, babies will begin to bat at and pop the bubbles.

Toddler. Older toddlers can chase bubbles around the yard, stomp on them, and even blow them themselves. They can also look at the different colors and observe the effect the wind has on them (Reitzes & Teitelman, 1995). Parents can help toddlers see the difference wet and dry hands have on a person's ability to touch or catch a bubble. The same effect can be tested on grass. Bubbles will pop on dry grass, but will not pop as quickly on wet grass.

Preschool. Parents can make a "bubble bottle" for their children. An empty 16-ounce plastic soda or water bottle works well for this activity. Parents fill a bottle with equal parts water and baby oil, add a few drops of food coloring, and then screw the cap on tightly. Children can move the bottle slowly back and forth to make waves, or shake the bottle to make bubbles (Herr & Libby, 1995).

Primary. Older children can participate in activities that may be too messy for younger children. Bubble art is one such activity. Parents mix one cup of tempera paint with two cups liquid dish soap, then pour the mixture into small

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paper cups. Children use a straw to blow bubbles in the cups, causing the bubbles to overflow. They can then hold a sheet of paper above the cup, so that the bubbles touch the paper and pop. This creates interesting designs. Another way to make bubble art is to place a spoonful of the soap/tempera paint mixture directly onto a piece of paper. Children then can use straws to blow bubbles and make designs. Or, children can dip bubble wands into the paint/soap solution and blow bubbles onto sheets of paper. These activities are best done outside, as they can be messy.

Older children can make their own bubble wands by bending and shaping pipe cleaners or connecting several plastic drinking straws into geometric shapes. Parents should give children plenty of materials and let the children explore making all different shapes through trial and error.

Chores/Helping

Subject Areas and Skills Learned

Social skills, math, language development.

Rationale

Chores help build social skills and responsibility in young children. Parents can promote positive self-esteem in children by allowing them to do chores and help around the house.

Experiences/Activities

Toddler. Even at an early age, children can begin to help their parents around the house with little jobs. Young children love to imitate their parents as they perform household chores. Toddlers can take items out of the grocery bags and hand them to a parent one at a time as they are put away. A similar activity is helping with the laundry, as the child hands items to be folded one at a time to the parent. Children at this age are eager to help their parents get the mail, sweep, rake leaves, feed the fish, throw away trash, or wash the car.

Preschool. Children can also participate in play chores. During warm weather, children can use plastic buckets or containers, dish soap, and water to wash any number of their toys. Children enjoy washing baby dolls; toy cars and

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trucks; doll or baby clothes; and toy dish, tea, and silverware sets. Parents can donate household items, such as sponges, old dishcloths, empty squeeze bottles, and dish drainers to use for this activity.

Primary. Older children can help set the table, a good activity for counting and portioning out (dividing), because they need to know how many forks, spoons, plates, napkins, and glasses they will need.

Portioning out or dividing food is another activity children can help with. This helps children learn mathematical concepts, such as fractions, multiplication, and division. Parents can have children count the total number of cookies, crackers, or candies, then divide up the goodies based on the number of people present. Children can also share single items, like whole pies or cakes, pieces of fruit, or sandwiches. Again, depending on the number of people to share with, children may divide the food into halves, thirds, quarters, or eighths.

Color

Subject Areas and Skills Learned

Science, art, and language development.

Rationale

Activities involving the exploration of color, such as painting with fingerpaints and watercolors, and coloring with crayons and chalk, help develop color awareness and offer children the opportunity to develop important process skills such as observing, classifying, and comparing (McIntyre, 1981a).

Experiences/Activities

Infant. Babies from two to four months of age are beginning to develop their sight and will focus on brightly-colored pictures and toys. One-year-olds enjoy manipulating and using large, non-toxic, washable crayons.

Toddler. Older toddlers can begin to explore a variety of painting materials using large paintbrushes and simple paint sets. It is easiest to introduce one or two colors at a time. The important thing to remember is to expect a bit of a mess and be prepared with clean-up materials.

Toddlers begin to notice colors in the environment, whether they can verbalize it or not. Parents can encourage color matching and sorting by providing toddlers with everyday materials and experiences (like sorting colored socks). Many books emphasize color, reinforcing the concept of color in a natural way.

Preschool. Preschool children can compare objects of same and different colors. Parents can help children to see there are many different shades and variations of each color in the rainbow.

In addition to many experiences using chalk on dry surfaces, preschool children can draw pictures on paper wet with liquid starch or on wet concrete and observe the effect this has on the chalk.

Primary. School-aged children continue to need many opportunities to work with color. They are older and can handle more potentially messy activities, like blowing paint on a paper through a straw or spattering paint with a paintbrush. They can also work with eyedroppers, mixing food coloring to make secondary colors. Children can place dropfuls food coloring one drop at a time into plastic egg cartons filled with water.

Recommended for Further Reading

Geisel, T. S. (1998). My many colored days. New York, NY: Random House, Inc.

Counting

Subject Areas and Skills Learned

Math and language development.

Rationale

It is a good idea to help children develop some number concepts before they enter school. The types of experiences should be concrete and made as meaningful as possible. Some memorization is required, especially in knowing the order of the numbers, but care should be taken to attach meaning to numbers through many concrete experiences with counting.

Experiences/Activities

Infant. Parents can start early by counting out the Cheerios, soda crackers, cookies, and fish crackers they dole out to their children. It is best to start with small numbers (five or less), especially because children this age might throw food when too much is in front of them!

Toddler. Toddlers love to eat finger foods of all types, perfect for counting out. There are also some good books that reinforce counting with their favorite foods, such as Cheerios and Pepperidge Farm Goldfish crackers. Parents can also count for their children other precious objects: crayons, blocks, and bean bag dolls.

Preschool. As children approach school age, parents can begin adding skip counting to their repertoire (e.g. 2,4,6...; 5, 10, 15...). Parents can also help children learn "tricks" for counting, such as keeping track of what you have counted by moving the items aside as you count them. This helps children acquire important concepts, such as one-to-one correspondence. Counting can be made very meaningful for children, especially if done for a purpose. Loose amounts of treats, such as marshmallows or M'n'Ms can be counted out in order to divide up equal portions among children. It's easy to see that sharing, aside from having obvious social benefits, is an ideal way to introduce math concepts. Later, children can learn ideas like one-half, as they split pieces of fruit or other food items (e.g.

sister gets half a banana, and so do I). Some good songs to sing that include counting are "This Old Man" and "One, Two, Buckle My Shoe".

Primary. Elementary school children can continue to build upon all the concepts they learned during their toddler and preschool years through everyday experiences. It is important that children memorize the numbers and can count up to a certain point, but even more important is that they understand the meaning behind the numbers. Parents should work use concrete materials, such as dried bean counters to work with children whenever possible. Children can pretend the beans are other things and make up addition and subtraction stories. For example: "There are five ducks in a pond, one flew away. How many ducks are left in the pond?" Other good, inexpensive materials parents can use to work with their children include: popsicle sticks, coins, small toys, crayons, blocks, and pencils.

Parents can make simple counting cards for their children by writing numbers and drawing circles next to the numbers on index cards (one number per card). Children can then count out beans or seeds and glue the appropriate number of them to the circles on the cards.

Recommended for Further Reading

Geisel, T. S. & Geisel, A. S. (1960). One fish, two fish, red fish, blue fish. New York, NY: Beginner Books, Inc.

McGrath, B. B. (1998). Goldfish counting board book. Natick, MA: Dancing Star Books.

Wade, L. (1998). The Cheerios play book. Mexico: Simon and Schuster.

Dramatic Play/Pretending

Subject Areas and Skills Learned

Language development, visual and performing arts.

Rationale

Children's symbolic thinking develops when they participate in play pretend activities. These literacy behaviors pave the way for later conventional reading and writing (McMullen, 1998).

Experiences/Activities

Infant. There are many infant toys available that represent adult pursuits and are made specifically to be mouthed, banged, and grasped by babies. There are tea sets, tool sets, and pots and pans sets, to name a few. Such toys serve a dual purpose: as babies, they are used as rattles and teethers; as children get older, they can use them for pretend play.

Toddler. Toy stores carry many different sets for pretend play, including kitchens, workbenches, tea and dish sets, doctor and nurse bags, household items (child-sized mops, brooms, vacuums, dusters, appliances), toy barbecues, and pretend food. There are also costume or uniform sets, like firefighter, doctor, or cowboy. Parents could spend a fortune on such items, but this is not necessary. A few key pieces, combined with ordinary household items, like cardboard boxes, can provide many hours of entertainment and learning to young children. Certain items, like inexpensive plastic dish and silverware sets, are important to have. Other items can be substituted with adult versions, such as brooms and dustpans. Children may even prefer using the real thing than a toy replica. Parents can provide a large cardboard box filled with old clothes, hats, purses, jewelry, socks, and shoes for dress up.

Preschool. Flannel or felt boards and puppet shows are a great way for children to reenact favorite stories. Parents can make inexpensive felt boards by gluing a large piece of felt to a two by three feet piece of foam board (available at craft stores). Parents can then draw and cut out various characters, shapes, letters, and numbers out of different colors of felt. These pieces will then stick to the flannel board. Parents can demonstrate how to retell a story using the flannel pieces (sticking one character up at a time as the story unfolds). Children will soon get the hang of this and begin to retell parts of the story themselves. If there are several different colors and sizes of shapes (squares, triangles, circles, etc.), children can sort and organize them into piles. Or they can just have fun sticking the shapes onto the board. Felt pieces can be stored in large plastic resealable bags.

Primary. Older children enjoy dramatic play using puppets they have made themselves out of out of brown paper bags, socks, paper plates, and colored paper. Children enjoy coloring their puppets with crayons or markers, then decorating them with wiggly eyes, scraps of fabric or felt, sequins, rhinestones, and chenille stems. They can make finger, hand, or stick puppets and use them to act out familiar stories. They can also make up their own stories and plays and act those out, too. Parents can provide children with a large cardboard box to use as a puppet stage.

Primary children can learn many math, motor, and social skills through pretend jobs or work. Examples include: restaurant (food server, cook, hostess), hair salon or barber shop (hair stylist), store (clerk, manager), library (librarian, patron), post office (mail carrier), classroom (teacher), doctor or dentist office (doctor, nurse), animal hospital (veterinarian, pet groomer), police station (dispatcher, police officer), fire station (fire fighter), auto shop (auto mechanic), pet show (judge), and construction site (builder, architect, construction worker).

Excursions

Subject Areas and Skills Learned

Science, math, social skills, and language development.

Rationale

Experience excursions can be an inexpensive way for parents and children to spend time together, exploring the world and discovering new things.

Experiences/Activities

Infant, toddler, preschool, and primary. There are many places parents can take their children for educational excursions. Some are free or low cost, others are more expensive. Examples include: apple orchard, pumpkin patch, Christmas tree farm, park, playground, petting zoo, duck pond, pony ride, picnic, zoo, wild animal park, children's museum, natural history museum, art museum, specialty museum (such as tar pits), and aquarium. Children enjoy such trips from the time they are infants. Babies enjoy looking at all the sights; toddlers will take a more active role, touching animals, feeding ducks, or trying out exhibits.

Games

Subject Areas and Skills Learned

Language development, names of body parts, social skills, and memory.

Rationale

Games facilitate positive interaction between parents and children. Many provide opportunities for turn taking, give and take, and humor.

Experiences/Activities

Infant. There are many games parents can begin playing with their children at birth. Peek-a-Boo is a classic game babies love. The parent hides behind a blanket or their hands, and then comes out from behind and says, "Peek-a-Boo!" They smile and laugh, and learn something about object permanence: when their parent briefly disappears, he or she will return. A variation of Peek-a-Boo for older babies, is hide-and-seek. It is played the same way, except the parent partially hides behind a piece of furniture.

Another game babies enjoy is for the parent to hide a toy (while the child is watching) behind a book or other screen. Later, as children begin to grasp the concept of "under", the parent can hide a toy under a blanket.

Toddler. Toddlers also love Peek-a-Boo. By this time, they can hide themselves under a blanket, and get a big kick out of an adult verbally wondering where they are. This is a perfect time to sing the song, "Where, Oh Where is __________?" using the child's name. Another game children love is "Patty Cake". There are several versions of this game and the rhyme that goes with it. The best ones involve using the child's name as part of the game.

Toddlers practice walking, standing, and a variety of other movements every day. "Simon Says" is an excellent game to help them learn body parts and practice their newfound balance and gross motor skills. With such little children, the idea is not to confuse them (as when playing the game with older children), but to get them to follow along and imitate the parent. Good ideas include touch your nose, turn around, wave your arms, wave bye-bye, and touch your ears. Other fun games that teach body parts include "Where is Thumbkin?" and the "Hokey Pokey".

Even at the young age of one or two, children can begin to play with decks of cards. Parents can show their children how to stack, sort, separate, organize, and classify the cards. At first, the child may only be able to separate the cards by color. With more experience and maturity, children learn to organize cards in more sophisticated ways. They may also begin to recognize that there are numbers on the cards, although they will not be able to name individual numbers. Working with cards helps pave the way for later card games, such as rummy, go fish, and old maid (Martin, 1988).

Preschool. As children get older, they can play more sophisticated games, like "Which Hand?" In this game, the parent hides a toy behind the back and asks the child which hand the toy is in.

Parents can continue to work with their children using playing cards. Parents show children the numbers on the cards and how to count the hearts, spades, clubs, or diamonds that correspond to those numbers.

Primary. Parents can encourage children to play games like "Red Light, Green Light" to practice listening skills and following directions (Herr & Libby, 1995).

Gardening

Subject Areas and Skills Learned

Science (change, plants, animals, life cycles, ecology), math (measuring), language development, physical skills, and social skills.

Rationale

Children can develop a sense of many important concepts through growing plants and working in a garden.

Experiences/Activities

Infant. Babies, when old enough to sit up on their own, can join an adult working in the garden by sitting on a nearby blanket as the parent works. Although too young to participate directly in gardening activities (they will just eat the dirt and plants), babies enjoy being outdoors in the company of someone they love. Parents can talk to their children about what they are doing: digging, planting, and watering. Babies will be fascinated by the activity and will enjoy looking at the pretty flowers.

Toddler. Toddlers love to play in the dirt! They will also taste it, if given the chance. Although a little dirt never killed anyone, it is important to make sure that no dogs or cats have defecated in the garden area. Toddlers can only watch without touching for so long as an adult plants flowers or pulls weeds. It is best to allow them to participate in some way. Toddlers can be in charge of collecting weeds an adult has pulled and placing them in a bucket. They can also pat down soil around plants or "help" rake leaves. It's hard for toddlers to understand that they shouldn't play in the flower beds once they have been planted, so a good idea might be to reserve a small patch of dirt specifically for toddler's digging. There are child-sized garden tools, such as rakes, hoes, spades, shovels, and trowels for this purpose. Obviously this is a messy endeavor, but one a toddler will enjoy immensely.

Children can also use seeds to grow small plants indoors. Parents can recycle clean, empty two-liter soda bottles, milk cartons, glass jars, plastic jars, and egg cartons to use as excellent bean sprouters and plant pots. There are many beans and seeds that sprout quickly and thrive indoors. Dried lima (mung) beans work well because they sprout without dirt, so the child can see very clearly the growth that is taking place. Parents should soak the beans overnight, drain them, then

have the child place them in a jar. The beans just ne
Too much water will cause the beans to mold, so it is
drain the beans each day, rather than let them sit in
couple of days, the beans will sprout roots and a shoo

he beans just need light and water to sprout.
to mold, so it is a good idea to just rinse and
n let them sit in a pool of water. Within a
roots and a shoot.

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Toddlers can also grow lima beans in egg cartons. Children can place a small amount of soil in each cup of the egg carton, insert one bean in each cavity, and lightly water. The sprouts will come up through the soil in a couple of days.

Preschool. Preschool children can begin to grow their own plants in small, inexpensive containers. Empty milk cartons that have been cleaned and cut in half work well for this purpose. Six-packs of easy-to-grow plants, such as impatiens, are the ideal size and are available very inexpensively at discount and home improvement stores. Adults can show children how to layer their pot with pebbles, sand, and potting soil; make a hole; plant the seeds or plant; and carefully add water. Popsicle sticks can be used to label plants or seeds planted. This is a good opportunity for children to experience firsthand the following concepts: changes over time, life cycles. Children can measure the plants periodically and record this information in the form of drawings in a journal. Parents can help the children label the drawings. Parents can show children how to check the plants by inserting one finger into the soil to see if they need water (Iatridis, 1981).

Children who are allowed to grow plants in a small garden patch or a large container can learn even more concepts. In this case, the children can count seeds, and measure how far apart and how deep they should be planted. Children can also look for insects and other animals they find in the soil. When digging in the soil, hopefully they will find several earthworms.

Primary. Older children also enjoy watching lima and other beans grow. Parents can use the same ideas recommended for toddlers and preschool children, but add to them. For instance, parents can encourage children to record the plant's growth over time in a journal. Children can draw a picture of the plant and write a paragraph describing the changes that are taking place. Children can also measure plant growth with a ruler and record this information in the journal.

Two-liter soda bottles work well as indoor terrariums. Children should first rinse the bottle and remove the label. Then they can fill the bottle one-third full with soil, sprinkle seeds on top of the soil, and water. The children should check the terrarium every day to see that the plants are getting adequate sun and water. Children have a tendency to want to over-water plants, but this is a lesson in itself. They will soon learn through experience that soil will mold and plants will die from too much water. They can also try placing the plants in different locations to see whether indirect or direct sunlight works best.

There are many other ways for children to grow things indoors. Children can grow grass seeds by planting them in pint-sized milk cartons or plastic cups filled half-full with dirt. The children should poke holes in the bottom of these containers for drainage, water the grass as needed, and place the grass where it will get sun. An alternative to this activity is for children to sprinkle grass seeds on a damp sponge set in a shallow pan of water (Herr & Libby, 1995). Children can try placing several sponges in different locations (in the refrigerator, near a window, in a dark room) to see what happens to the seeds in each case.

Grocery Shopping

Subject Areas and Skills Learned

Math and language development.

Rationale

Grocery shopping is another ordinary routine that can be transformed into a learning experience for young children. Parents can optimize their children's learning during this time by involving them in the entire process.

Experiences/Activities

Infant. The grocery store is a great place for parents to talk to their young children. There are so many people and things to look at; infants are often wide-eyed during the experience. Parents can talk about the items as they pick them out, describing the attributes of each, and allowing the child to take a hands-on part whenever possible. Parents can have children feel a cold milk carton, listen to the noise a box of dried noodles makes, or smell the aroma of fresh fruits and vegetables.

Toddler. Toddlers definitely love to be a part of the action, and the benefit of talking to them will even be more evident as they repeat words and phrases.

Parents should continue to describe the grocery items and allow children to touch as many as practical.

Toddlers can begin to help mom or dad unload and put away the groceries after each trip. They enjoy helping with grown-up activities. This activity helps build self-esteem, language, following directions, and listening skills when adults talk about what children are doing, ask children to get certain items, and verbally appreciate their help.

Preschool. Older children can begin to lend a hand in the weekly grocery shopping.

Parents can also create a pretend grocery store for the children to shop at in the house. Parents can save clean, empty cereal boxes, oatmeal canisters, plastic peanut butter jars, milk cartons, and juice cans, as well as paper sacks and plastic grocery bags for their children to play with. There are many toy shopping carts, cash registers, and play money that can be purchased at discount or toy stores. Calculators and adding machines can also serve as good cash registers, and many parents have these around the house already. Parents can give children old purses, wallets, credit cards, and homemade play money to use. Old bookshelves or cardboard boxes can serve as shelves for the "merchandise". This is a way to introduce important money skills, such as counting of coins, in a fun and meaningful fashion.

Primary. There are many things school-aged children can do to help with grocery shopping. They make lists of the items needed and sort out which coupons will be used. Once at the store, they can weigh the fruits and vegetables. They should first guess how much they think the particular item will weigh before weighing it.

Letters/Greeting Cards

Subject Areas and Skills Learned

Language arts and art.

Rationale

Making greeting cards and writing letters to others is another enjoyable, meaningful way to encourage writing in young children. Young children go through many stages before they learn to write conventionally, and opportunities to practice writing are essential for their literacy development.

Experiences/Activities

Infant. Even babies can make cards with the help of their parents! From a very early age, children will enjoy making cards for loved ones for birthdays and holidays. Parents can draw a simple picture and write an appropriate message and let the child color in the picture with crayons. Or, parents can simply write the message and leave the rest of the paper blank for the child to scribble on. Infants can also use fingerpaint to decorate the cards, which makes them even more bright and colorful.

Toddler. With continued practice, toddlers' scribbles become more refined. They begin to attempt to color pictures in, rather than color in the entire page. Parents can continue to write messages on the cards and allow toddlers to scribble a drawing with crayons or markers. Although there are washable, non-toxic markers for toddlers, they require more supervision because children inevitably will draw on their faces, hands, clothes, and the table. Toddlers can also use fingerpaint, watercolors, or tempera paint to decorate the cards.

Preschool/Primary. Children never seem to tire of drawing and painting with interesting materials. Most children are very eager to make cards for their friends and loved ones. Preschool children should be allowed to take risks in writing, so correct spelling should not be emphasized. All attempts at putting pen to paper should be encouraged, whether they are scribbles, letters, or words. Parents can also dictate children's messages on the cards to complement what the children have written on their own.

School-aged children can write their own messages with the help of an adult. Older children can be shown that because cards are gifts for other people to read, it is important that the spelling be correct and the handwriting legible. This is an excellent, meaningful way to impress upon children the importance of penmanship and spelling. Children begin to see that since writing is a form of communication, it is important that their messages be legible to others. Parents can have children practice writing their message on a scrap piece of paper. Parents should encourage children to try their best with the spelling, then circle the words they are unsure of. Parents can then check their work and help them correct the misspelled words. It is better to have the children try to figure out how to spell the word correctly, rather than give the children the answer. Parents might underline the letters that are correct and have the children try to fix the letters that are not underlined. After correcting their work, children can write the message in their best writing on the paper they are going to use for the card. Children can then illustrate the card and color or paint it.

Another way to promote writing development in young children is to have them write letters to their friends and family members. Parents can show children the parts of a simple letter, such as the date, the addressee, the body of the letter, and the signature. As with the greeting cards, children should write a first draft of the letter on lined paper, then recopy it in their best writing once they have corrected it. Children can include a drawing with the letter, if they wish.

Music/Sound

Subject Areas and Skills Learned

Science (sound), music, math, listening skills, and creativity.

Rationale

Young children develop a basis for many science and math concepts through exploration with sounds and music.

Experiences/Activities

Infant. Babies enjoy listening to, making, and sharing sounds with others. These activities provide a base for simple understandings of the science of sound. Some researchers feel playing classical music boosts babies' intelligence and lays a foundation for later math learning. This type of music can be very soothing at nap- or bedtime and can also serve as good background when playing during the day. Babies love to make noise, by shaking rattles or banging objects together. They learn that when they shake a rattle or clack two toys together, pleasant (and sometimes loud!) noises come forth. Parents can make homemade rattles by putting choke-safe foods (like cereal Os) into containers with lids (margarine tubs, smooth metal containers).

Toddler. Toddlers naturally love music and sound. Parents can encourage this by calling their attention to the noise that is made when wooden or plastic blocks, spoons, or other items are banged together. Listening to and playing with homemade metal, bamboo, shell, or wood wind chimes helps children observe and discover what makes the sounds and how they differ depending on where the chimes are located and what they're made of (McIntyre, 1981b).

The playground is actually another good place to discover sounds. Playground equipment is often made out of metal. There are poles of different sizes on such equipment, that, when struck with a stick, makes different sounds depending on the circumference of the pole.

Toddlers also like to play and listen to musical instruments. While some musical instruments are not recommended for toddlers, there are many toy instruments (drums, xylophones, pianos) available. Parents can make musical instruments out of everyday materials: toilet paper and paper towel tubes become trumpets; pots, pans, and wooden spoons become a drum set; and jingle bells can be strung together with yarn (make sure they do not get loose, as this can be a choking hazard). If parents are considering enrolling their child in some sort of music lessons, research indicates that the best time to begin learning is at about age three (Begley & Hager, 1996).

Preschool. Preschool children are old enough to use real musical instruments, such as maracas, triangles, tone bars, tambourines, and bells. Such instruments for young children to explore and manipulate and help the children learn about cause and effect, quality of sound, and music. Children can also strike a stick or a spoon against the sides of glasses filled with varied amounts of water and listen to the different sounds each one makes.

Primary. Elementary school children can make their own musical instruments using ordinary household materials. Empty coffee cans and oatmeal canisters serve as drums; plastic Easter eggs, film canisters, and egg-shaped pantyhose containers can be filled with dried beans or peas to make shakers; tin foil or metal pie pans can be used as cymbals; paper plates stapled together with dried beans in the middle serve as tambourines; kazoos can be made by attaching a piece of waxed paper (with holes punched in it) to the end of a paper towel roll with a rubber band; and wooden dowels serve as rhythm sticks. Of course, all of these handmade instruments can be decorated with paints or markers (Herr & Libby, 1995).

Recommended for Further Reading

Hart, A. & Mantell, P. (1993). Kids make music! Clapping and tapping from Bach to rock. Charlotte, VT: Williamson Publishing Co.

Nature

Subject Areas and Skills Learned

Science, language development, and visual art.

Rationale

Exploring nature is a great way for parents to get out and enjoy time with their young children, and it can be free or inexpensive! Exploring the backyard to discover, watch, touch, and collect ants, snails, pillbugs and other (harmless) creatures can prove very exciting for toddlers. Exploring the properties of dirt and mud, though a messy activity, is another excellent way for young children to learn about the world around them. Simple walks to the park or around the neighborhood are great opportunities for children to listen to and observe nature. A duck pond with lots of different kinds of birds is a lot of fun to visit and a great learning experience (Reitzes & Teitelman, 1995).

Experiences/Activities

Infant. Parents can take their babies on walks in the stroller or riding in a baby backpack on mom or dad's back. Parents should talk about the sights, scents, and sounds they come across: colorful flowers, birds chirping, and fresh cut grass.

Babies can also partake of the great outdoors. They like to watch and listen to things in the environment, such as birds, water, and wind.

Toddler. Toddlers are born explorers. The best trips are close by, simple, and inexpensive. At a duck pond, toddlers enjoy walking or running up to the birds. A trip to a small zoo, petting zoo, or a farm is a great way to let children see different kinds of animals firsthand. Toddlers will especially love getting up close, touching, and feeding the animals. Visits to the local library can add to these trips; there are many books for toddlers about the zoo, animals, and nature. Durable board books with actual photographs or realistic drawings and simple words are best.

Toddlers also love nature walks. They have a tendency to "stop and smell the roses", which is conducive to the exploration and discovery of nature. They naturally will pick up sticks, rocks, leaves, and anything else they find along the way. Children can take their collections home with them to study more closely.

Children can add to rock and leaf collections, and sort the items according to the attributes they see. Parents can stop and show toddlers non-dangerous animals such as ants, sow bugs, and snails. Ant and snail trails are especially good to observe. Now is a good time to practice admiring potentially dangerous animals, like strange dogs and cats, from afar.

The changing seasons, and their characteristics (e.g. falling leaves, rain, wind, snow, new plant growth) are excellent opportunities for children to enjoy the outdoors and learn new things. Toddlers love to sit in, walk through, play with, and rake piles of autumn leaves. Children can go outside during a light rain and feel the drops of water coming down. A windy day is a great day to blow bubbles, fly a kite or paper airplane, then talk about the movement of air. If children have access to snow, a whole new world of fun will open up to them. They will also see one of their favorite things—water—in a different light. As the weather warms up in the spring, children can walk barefooted on the new growth of grass. Many toddlers love this sensation and will run around in the grass in delight.

Even nighttime is a good time for toddlers to observe nature. Children enjoy looking at and pointing to the moon and the stars. They soon learn to say the names for these objects.

Preschool. Preschool children as well as toddlers enjoy looking at objects in nature, including sticks, insects, grass, flowers, hands, and fingers, through magnifying glasses. The older children are, the more parents can point out how the magnifier makes objects appear larger. Parents can begin at an early age to show children the proper way to hold a magnifying glass. Inexpensive plastic magnifying glasses can be found at party supply stores.

Objects collected from the natural environment, such as leaves, sticks, and seeds, can be used to enhance many art projects. Children can make leaf rubbings by placing paper over several varieties of leaves and coloring the paper with crayons. Children can also create collages and mosaics by gluing dried seeds, beans, or pasta to heavy construction paper. Halloween is a natural time for students to save and dry pumpkin seeds for such projects. Seeds, beans, and pasta can also be painted with tempera paint or dyed with food coloring.

Children can also grow their own animal farms by creating habitats for small creatures such as earthworms, mealworms, crickets, or ants. Children can create their own worm farms by filling a large clear jar two-thirds full with soil, then adding some earthworms. The children must provide food (lettuce, cornmeal, dry cereal) and water (enough to just make the soil damp) as needed. Earthworms like their habitat dark, so black construction paper should be wrapped around the jar and taped in place (children can take the paper off to observe the animals). A mealworm farm can be created in a shallow pan or shoebox. Children place rolled oats and mealworms into the container, then add an apple for food. Over several days, interesting changes will occur in the mealworm population. Children can take individual mealworms out for closer inspection (e.g. under a magnifying glass) and careful handling. Cricket habitats can be made by filling a glass jar with lettuce leaves and crickets. In addition to the lettuce leaves, crickets will also eat canned corn (drained) and bananas. Earthworms, mealworms, and crickets can be purchased inexpensively at most pet stores. Ants for an ant farm are available by mail order from the company that sells ant farms (Uncle Milton is one company).

Primary. Older children enjoy making homemade bird feeders out of pinecones. The children can mix peanut butter and cornmeal together, then spread it on the pinecones. Next they roll the pinecones in birdseed. After attaching a string, the children hang the bird feeder outside on a tree.

Parents can elaborate on children's previous knowledge of the moon and stars by discussing topics like the phases of the moon and the positions of the stars. Children can keep a log or journal of the nightly position and phases of the moon.

Children can learn many science concepts by closely observing cut flowers and flowers growing in the yard or neighborhood. Parents can allow children to pick a few flowers, then dissect them to discover their parts. Children can look at petals, seeds, and stems through magnifying glasses. Parents can encourage writing and drawing skills by providing children with paper or a journal to record their discoveries. Children can draw pictures of the whole flower first, then draw the individual parts. Parents can provide children with vocabulary and encourage them to label their drawings. Children can also be encouraged to write their name, the date, and a few sentences on the paper.

Recommended for Further Reading

Hirshfeld, R. & White, N. (1995). The kids' science book: Creative experiences for hands-on fun. Charlotte, VT: Williamson Publishing Co.

Losordo, S. (1998). Cow moo me. Mexico: HarperCollins Publishers Inc.

Milord, S. (1996). The kids' nature book: 365 indoor/outdoor activities and experiences. Charlotte, VT: Williamson Publishing Co.

Shedd, W. (1994). The kids' wildlife book: Exploring animal worlds through indoor/outdoor crafts and experiences. Charlotte, VT: Williamson Publishing Co.

Other Dry Materials

Subject Areas and Skills Learned

Science, math, and language development.

Rationale

Children need a basic foundation of exploring objects in the world around them. This helps develop physical knowledge and paves the way for later math and science learning. Allowing children to play with dry, yet fluid, materials adds another dimension to their understanding of solid objects. Language develops through the exploration of such materials when parents talk to their children about the materials and the children are encouraged to respond.

Experiences/Activities

Infant. Infants love to touch, feel, taste, and smell new things. Dry materials, such as breakfast cereal, oatmeal, and cornmeal work well to satisfy a baby's natural curiosity and desire to manipulate objects. Parents can place a cupful of material into a foil pan or plastic container and let the baby sit on the floor and play with it.

Toddler. Toddlers also love to work with dry edible materials. They will need a larger container (new, clean plastic kitty litter pans work well), and several tools for pouring (e.g. cups, funnels, shovels, spoons). Parents can combine different types of cereal, oats, and cornmeal and let children strain the material through different sized mesh sieves and strainers. On a smaller scale, parents can encourage pouring and filling during snack time. They can supply children with two or three small bowls of different sizes and some cereal O's to eat and play with. Toddlers discover fast that they can pour the cereal from one container to the next. They will alternate between eating the cereal and playing with it.

Preschool/Primary. Children can discover many math concepts through working with natural materials such as lima or pinto beans and pumpkin seeds. They can count them, fill and spill them into different sized cups and containers, or fill measuring cups with them. Older children continue to need many hands-on experiences over time with concrete materials such as these. They have a natural need to actively manipulate objects in the world around them. Providing opportunities to work with concrete materials helps satisfy their need to explore, discover, and touch everything.

Pets

Subject Areas and Skills Learned

Science (life), math (measurement), language arts, and social skills (responsibility).

Rationale

Having a pet is a great way for a child to learn to care for another living thing. Traditional small pets that many children have include fish, hamsters, guinea pigs, mice, snakes, and rats. Children also love to own dogs and cats.

Experiences/Activities

Infant. Babies enjoy looking at and petting the family pet. Care must be exercised as to insure the safety of the infant, however. Cats can scratch, and hamsters, guinea pigs, and dogs may bite. Babies also do not know their own strength and may inadvertently hurt an animal by pulling its fur or tail. It is always best to only allow pets around infants under adult supervision, and only when the parent is certain the animal is friendly and trustworthy.

Toddler. Toddlers have a tendency to rough with animals. Most of the time, an animal will walk or run away if annoyed by a toddler. However, as with infants, it is important to make very sure that the family pet will not retaliate by biting or scratching. That said, having a pet is a good idea for many reasons. Children are less apt to be afraid of friendly house pets if they are used to being around them. Pets are a perfect opportunity to learn to be gentle and nice to others (as in petting an animal softly). Pets may also be a very important part of the family to a toddler. "Doggie" and "kitty" are often some of the first words a toddler learns.

Toddlers may still be a little rough with some of the small animals, like mice and hamsters. It is a good idea to wait until a child is mature enough to handle these animals carefully.

Preschool. Another good reason to wait until children are older is because the older they are, the more apt they are to be able to take on some of the responsibility of caring for the animals. Hamsters are a traditional young child's pet, but there are a few drawbacks. First, hamsters are not necessarily the friendliest creatures. Some do not like to be held and even bite (they can also urinate when you least expect it!). Also, although one would think hamsters would be a lot of fun to watch, running around in the tubes and on the exercise wheel, they spend a lot of time sleeping and eating during the day and playing at night (when everyone is asleep!). They can and do escape from their cages if not properly secured and they are not very fun to clean up after. Hamsters do not get along well with other hamsters, so it is not recommended that a person buy more than one at a time. Last, hamsters only live about two years, which can be hard on a young child.

Guinea pigs are a little bit better choice. If handled regularly and gently from the time they are small, they become quite friendly. Young children have fun feeding them carrots, lettuce, and celery. Their cages get really messy, however, and are difficult for young children to clean up. Guinea pigs like to live in pairs or groups, and breed easily in captivity. Guinea pigs usually live at least five years.

The best choice may well be a white rat. Contrary to popular belief, rats are clean and intelligent. They are friendly and like children to hold and play with them. Their cages require about the same clean up as the other rodents mentioned—their cages can be lined with newspapers or sawdust. Rats are social creatures and like the company of their own kind. It is important to make sure that rats are separated by gender, because they breed quickly and abundantly.

Primary. School-aged children are much more likely to be able to handle the responsibility for taking care of a pet. They do tend to tire of the tedious and never-ending job of cleaning up after them, so parents should expect to shoulder much of this responsibility.

Other, less traditional and inexpensive pets include insects and snails. With a small investment, children can own crickets, mealworms, an ant farm, or garden snails. Pet stores sell small plastic cages with ventilated lids for the purpose of housing insects and snails. They also sell crickets and mealworms very inexpensively. Mealworms can be kept in a shallow box filled with oatmeal. The only additional food they need is an apple. Ant farms can be purchased at toy stores and include a coupon for a shipment of live ants to inhabit the farm. These are all good opportunities for children to observe nature. Parents can have students draw and write about the animals. These pets do not cost much, take up a lot of space, and children may not be broken-hearted when they die.

Recommended for Further Reading

Boynton, S. (1995). Doggies. New York, NY: Simon and Schuster.

Play Dough/Clay

Subject Areas and Skills Learned

Art, science, language development, social skills.

Rationale

Play dough and clay are great tactile learning materials. Play dough can be made at home from very simple ingredients such as flour, water, salt, and non-toxic food coloring (Herr & Libby, 1995). There are also edible clay recipes made from ingredients like peanut butter that children can manipulate *and* taste (Reitzes & Teitelman, 1995).

Experiences/Activities

Infant. Using commercial and homemade play dough with babies should be avoided, because they will just want to eat the materials. However, homemade edible play dough is a great idea, because it is something new and different for babies to feel and taste. Constant adult supervision is required, because babies (and toddlers!) can choke on foods like peanut butter.

Toddler. Toddlers love to feel the texture of moldable materials as they squeeze, push, pound, roll, and flatten them. "Goop" is an exciting material made from cornstarch and water. To make goop, parents mix one box of cornstarch with about $\frac{1}{2}$ to $\frac{3}{4}$ cup water in a shallow cake or pie pan. Goop is an interesting material, because it changes from liquid to solid and back again right before the children's eyes as they are playing with it. To limit mess, parents can mix the goop in a quart size resealable plastic bag and add a few drops of food coloring (this will stain hands and clothes, so the plastic bag must remain tightly sealed). Children can squish the goop in the bags without getting dirty. Parents should also be encouraged to try goop without the bag, because it is more fun for children if they can actually touch the material. This makes a good outdoor activity, especially in the warm months, when garden hoses can be used to clean up. Goop will last for a few days, but not indefinitely, because it will begin to mold.

Preschool. Three- and four-year-old children can take a greater part in preparing materials, like goop and homemade play dough. They enjoy mixing the ingredients and adding food coloring to the mixtures. Parents can take the opportunity to discuss the changes in matter that are taking place (e.g. dissolve, evaporate).

Primary. Older children continue to need many tactile experiences with interesting substances over time. They love manipulating play dough and making things from clay. Another dimension can be added to this activity by allowing children to paint their creations once they have dried.

Recommended for Further Reading

Hauser, J. F. (1998). Kids' crazy concoctions: Mysterious mixtures for art and craft fun. Charlotte, VT: Williamson Publishing Co.

Press, J. (1994). The little hands art book: Exploring arts and crafts with 2- to 6-year-olds. Charlotte, VT: Williamson Publishing Co.

Sand

Subject Areas and Skills Learned

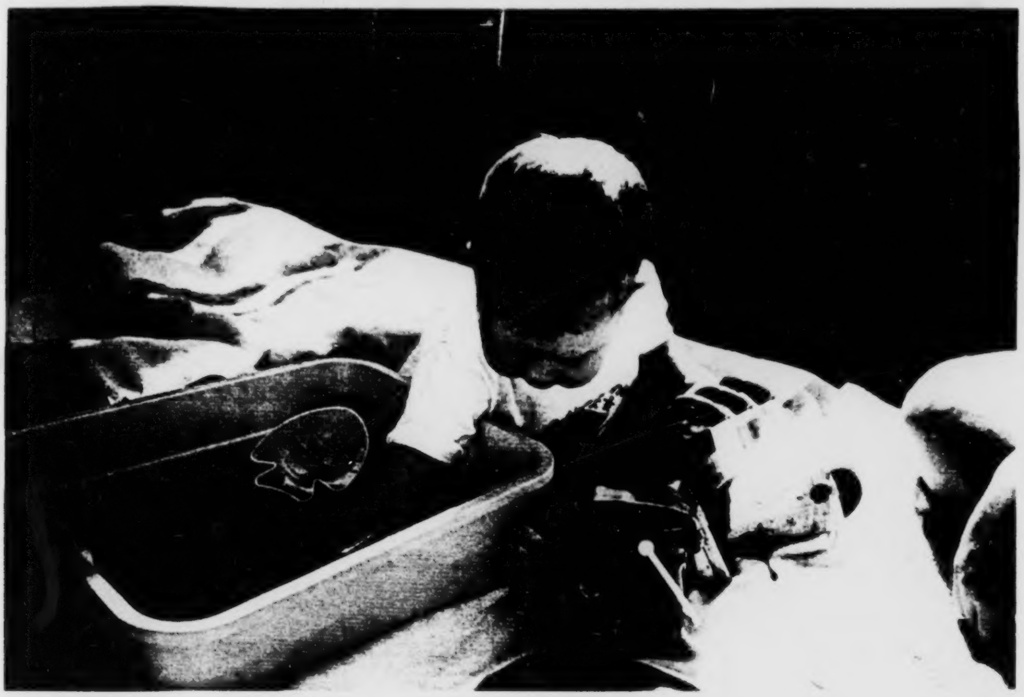
Math, science, social skills, physical development, and language development.

Rationale

Exploration with sand is a tactile activity children of all ages love. This activity helps children learn many important math and science concepts, such as volume and properties of matter. It also provides children the opportunity to practice social skills, such as taking turns and appreciating others' work.

Experiences/Activities

Infant. As babies near the age of one, they enjoy scooping, pouring, and feeling sand. The same types of inexpensive toys and containers that are used in the bathtub can be used in the sandbox. If a parent does not have a sandbox, they can make one relatively inexpensively by using a new, clean plastic kitty litter pan and some sanitized play sand (available at home improvement and toy stores). Also, parents can take their children to the parks, as most playground areas have sand beneath the play equipment. In this case, it is important to check for hazards like broken glass, trash, and animal feces.



Toddler. Toddlers love to play in the sand at a park, the beach, or a sandbox. In early spring, most stores sell inexpensive beach toys, including shovels, small buckets, sieves, and molds. These toys help children learn about the properties of sand through pouring, straining, filling, and emptying. Adding water to the sand adds another dimension and allows children to mold and shape the sand.

Although messier than sand, mud is another important medium with which young children should be allowed to explore. The same tools used for sand play can be cleaned and used for explorations with mud.

Preschool and primary. Older children continue to need many opportunities to independently explore the properties of mud, sand, and water.

Recommended for Further Reading

Hill, D. (1995). Mud, sand, and water (7th ed.). National Association for the Education of Young Children: Washington, DC.

Shapes

Subject Areas and Skills Learned

Math and language development.

Rationale

Working with shapes in a variety of ways allows children to learn many math concepts, such as names of shapes, properties of shapes (number of sides and corners), three-dimension, classification, and sorting.

Experiences/Activities

Infant. It is a good idea for a baby to have some sort of shape sorter. Some are simple with just a few shapes, others have many shapes, and others are truly three-dimensional. Some are made of wood, but most are made of plastic. At first a baby will just mouth, grasp, and play with the shapes.

Toddler. Toddlers soon gain the capability to fit the shapes in their respective holes. For some, this is a trial-and-error process, as they try every shape in each hole, until they find one that fits. Others look carefully at the shapes, then turn the container around until they find the appropriate hole. Either way, this is a great opportunity for problem solving.

Preschool. As children gain experience with scissors, they can begin to cut out their own shapes. Parents can draw squares, rectangles, triangles, and circles for their children to cut out. This is a good time to talk about shape names, and ask the children questions about the number of sides and corners.

Primary. Older children enjoy working with geoboards, square boards with many pegs organized in a grid. Parents and children can stretch rubber bands over the pegs, creating all sorts of shapes. Children this age should know many of the names of the shapes already; parents can help name the ones they do not know, as well as ask questions about the characteristics of each type of shape (Anderson, 1998). Children can draw or cut out the shapes they make.

Children can also use colored construction paper cut into various geometric shapes to make pictures. They can either cut the shapes out themselves or the teacher or parent can pre-cut circles, triangles, squares, rectangles, and other shapes using a die-cut machine (available to use at craft stores). Children glue the shapes to paper to make designs or pictures of people, animals, or objects. The children can then write about their pictures in a journal or on a piece of paper, describing it in a few sentences.

Sharing Books

Subject Areas and Skills Learned

Oral and written language development, math, science, and social studies.

Rationale

Aside from the obvious potential for language development, there are many fictional children's books that focus on subject areas, such as math, science, and social studies and include good story elements. There are also content-focused nonfiction books that reinforce everyday science experiences. Books are a good way to reinforce basic concepts, like counting and number, in a fun fashion.

Experiences/Activities

Infant. Beginning at a very early age, parents can make reading books together a daily experience. As soon as babies can sit up on their own, they will enjoy sitting in a parent's lap and looking at, grabbing, and chewing on books. From an early age, it is important to let children play an active role in the sharing of books. Parents should pay close attention to the signals babies send them. For example, if a child becomes tired or cranky, a parent should not press on with reading the whole book. As a matter of fact, verbatim reading of the text should not be the main focus at this time, anyway. Parents should also point to and label pictures, and talk about what is happening in the story. Babies should be allowed to hold books themselves, turn pages, even chew on the books. The goal is to make the experience enjoyable. A good tip is to quit reading while the child is still interested, before the child has tired of the experience. In other words, leave them wanting more!

Toddler. Parents can make books for their toddlers, using words the child says or knows. Each page should have one word and a matching illustration. The child can color the picture in with markers or crayons. The pages can be laminated and stapled together to make them last longer. Children love these books because they guarantee success!

As children get older and gain more experience with books, they can begin to participate in the reading. Parents can encourage children to comment on the story, name and point to pictures of familiar objects, and join in with words they remember.

Preschool. Preschool children also enjoy making books. They can dictate words to an adult, then illustrate the pages themselves. Children who have had many experiences with books can join in on familiar and predictable texts. They can: predict words, say words as parent reads them, and "pretend read" books from memory. It is important to read children their favorite books over and over again for this reason. The do not tire of hearing the story many times and it helps them build confidence as they gradually remember and "read" more of the story themselves.

Primary. Older children can begin to participate more in the reading, discussing, and making of books. School-aged children should read and be read to several times a day. Frequent trips to the local library are an excellent way to instill a love of reading in children at an early age.

Recommended for Further Reading

Boynton, S. (1995). Moo, baa, la la la! New York, NY: Simon and Schuster.

Boynton, S. (1995). Opposites. New York, NY: Simon and Schuster.

Boynton, S. (1995). The going to bed book. New York, NY: Simon and Schuster.

Cousins, L. (1996). Humpty Dumpty and other nursery rhymes. New York, NY: Dutton Children's Books.

Singing

Subject Areas and Skills Learned

Math, science, social studies (multicultural), and language development.

Rationale

Songs are ideal for learning basic concepts, like the ABCs, counting, daily routines, and body parts. Depending on the tempo and tone of the songs, they can be used to help quiet or calm children down or help them burn off extra energy. Listening to and learning songs builds listening and memory skills. Because finger, hand, and whole body movements often accompany songs, they help children practice fine- and gross-motor skills. Funny songs are entertaining to children and help develop humor in them. Appendix C lists examples of traditional songs to sing with children of all ages. Of course, songs made up by parents are wonderful, too! Songs that include a child's name are especially good for fostering positive self-esteem in young children. Often a familiar song can be changed slightly to include a child's name.

Experiences/Activities

Infant. Infants enjoy being sung to from the time they are born. Singing is a natural and pleasant way to facilitate learning during daily routines. Parents can use songs to: divert a child's attention during a diaper change, name body parts during a bath, or gently lull a child to sleep at bedtime. Songs are one more opportunity for children to hear language in their daily lives.

Toddler. Singing "Old McDonald" to a toddler helps reinforce the animal names and sounds the child already knows, as well as learn new ones. The "ABC Song" is great for helping learn by memory the letters of the alphabet. Eventually the toddler will begin to sing the songs on her (or his) own.

Preschool/Primary. Preschool and elementary children continue to enjoy songs, nursery rhymes, finger plays, rhymes, and dances. These activities help children develop language, as they acquire new vocabulary and practice speaking and listening in a fun way. Such activities allow for children to practice motor skills and burn off excess energy.

Talk

Subject Areas and Skills Learned

Language development and all other subject areas.

Rationale

Talking to children is an essential activity that should take place all throughout the day. From the time children are born, they are receptive to language and hunger for constant human interaction. Positive parent-child discourse helps build children's vocabularies and listening skills, and allows them to practice language in a comfortable setting. Parents should praise children for their approximations and encourage them to take risks.

Experiences/Activities

Infant. Parents should make a habit of talking to their babies all day long. Daily routines, such as diaper changes, bath time, and meal times, are a natural time to talk with a baby. A good game to play with baby is to mimic the coos and sounds he or she makes. For example, when baby says "da", parent says "da", too. This game mimics the give and take of real conversation.

Toddler. Toddler's vocabularies grow by leaps and bounds. They also understand much more than they can say. Parents should increase children's vocabularies by introducing new words as appropriate. This should be done in a natural way, without overtly correcting children. Another way build vocabulary in a young child is to talk about the environment—what is happening, and label and describe objects and actions.

For further language development, parents can play a variation of the mimic game with toddlers. In this case, the parent says a word the child knows, and the toddler repeats it.

Preschool/Primary. Preschool and elementary school children continue to need daily verbal interaction with parents and other adults in order to develop language. It is important for parents to talk with their children as much as possible, answering their questions and paying attention to them. Such interaction also helps build children's self-esteem, because it tells children "You are important. I will take time for you."

Water Play

Subject Areas and Skills Learned

Science, language development, social skills, physical skills, and math.

Rationale

Water play and exploration with a wide variety of materials is a developmentally appropriate way to learn important concepts, regardless of a child's age, gender, culture, language, or physical and mental abilities (Crosser, 1994). It is an excellent way to promote children's intellectual, social, and emotional development.

Experiences/Activities

Infant. The best place to introduce small children to water play is in the bathtub. There are many bath seats available that allow babies to sit up safely and have their hands free to enjoy the water and toys. Everyday activities such as bathtime are a perfect opportunity for water exploration. Gradually, young children discover the properties of water as they play with a variety of inexpensive items from the store and around the house. A plastic cup poked full of holes can serve as a "rain maker". Babies of all ages love to look at and touch the water droplets that come from such containers. Older babies enjoy feeling the rush of water coming out of the faucet as the bathtub fills up. Plastic cups, scoops, funnels, and strainers are fun for babies to fill and pour. Sets of measuring cups and spoons, straws, sponges, plastic tubes, and eye droppers are other excellent tools for free exploration (Segal, 1985). Many of these items are easily found in the kitchen. Leftover detergent scoops, empty shampoo and bubble bath bottles, and clean squeeze bottles make wonderful, free bath toys. Washcloths can also serve as bath toys: parents and babies can play peek-a-boo with them; children can practice washing themselves with them; and children can watch how dry washcloths absorb water. Bathtime is also the perfect time for a child to learn about the parts of his or her body. Later, as babies become less apt to tip over, on warm days, they can sit in small wading pools outside. This achieves the same learning outcomes, just in a different setting.

Toddler. Toddlers love to play in the bathtub as much or more than babies. During warm weather, small kiddie pools located outside serve the same educational purpose as the indoor bath. Parents can use the same equipment inside and out. One of the best things to remember is to provide children with challenging and interesting materials for water play. The materials do not have to be expensive and many can be found around the house. Children usually enjoy free items, like empty shampoo bottles, more that some of the expensive store-bought toys. Variety is key, and simple is usually better. Some examples of good water toys include: plastic cups, funnels, straws, sieves, measuring cups, measuring spoons, sponges, and plastic spoons. Older children enjoy it when parents add a few drops of food coloring or colored bubble bath to the bath water.

Parents can help build children's vocabularies by using new words, like pour, funnel, bottle, and sprinkle. Children may not be able to say the words, but they will begin to understand them.

Eggelston & Weir (1975) suggested combining water with other materials to expand learning. Some examples of items that can be added to water include: sugar, salt, food coloring, baking soda, sand, cornmeal, cornstarch, baby oil, dirt,

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ice, vegetable oil, and liquid, powder or flaked soap. Water can also be poured on sponges, paper, wood, or concrete and the results observed.

Preschool. The older children become, the more parents can talk with them about their water play. Parents should ask open-ended questions, model new vocabulary, encourage predicting and guessing, and ask children to describe what they are doing. Three- and four-year-olds can begin to experiment with adding drops of food coloring to cups of water or plastic egg cartons filled with water. Children can either add one drop of a single food color at a time or experiment with adding drops of two or more colors to the water.

Primary. If parents provide children with a wide variety of materials, children can experiment to find out which items sink and which ones float in the water. They can then discuss their findings and speculate as to why some items sink and some float. Other concepts that can be explored include absorption, evaporation, and dissolve. Children can predict and estimate how much water will fit in particular containers, then discuss differences.

Weather

Subject Areas and Skills Learned

Science, math, and language development.

Rationale

Children are naturally curious about and interested in the weather. They love to experience it firsthand (sometimes to the dismay of their parents!). Children benefit from opportunities to observe, talk about, measure, record, and predict weather phenomena such as rain, wind, sun, and snow.

Experiences/Activities

Infant. Parents can talk about the weather with their infant children. They can point out clouds, raindrops, or talk about the temperature. Parents can talk about the warm sun that is shining on a child's face, point out the wind that is blowing the leaves all around, or allow children to feel a few light sprinkles on a rainy day.

Toddler. Parents can talk about the weather with their children on a daily basis. Comments like, "look at the clouds", "it's raining", and "the sun is warm today" all prompt excitement and curiosity on the part of a toddler. On days when it is raining lightly and it is not too cold, parents can allow children to go outside and experience the rain. Bubbles are an ideal way for children to visualize the wind or lack of it.

Preschool. Parents can point out and discuss different types of clouds. Even if they do not know the scientific names for the clouds, they can discuss with their children how the weather relates to the different shapes and colors of clouds. For example, windy days might have long, stringy clouds; fair days, puffy clouds; and rainy days, large gray clouds.

Primary. Children can keep track of weather changes by recording each day's weather in a journal. Parents should have children draw a picture of the weather each day and write a brief description below it.

Children can observe rainfall in several ways. One way is to set a container outside and measure the amount of rainfall. Another way is to stretch a nylon stocking over an embroidery hoop, then dust the stocking with powdered sugar. A child then takes the contraption outside and lets the rain fall briefly on it. The child can then examine the size and number of the droplets that fell on the stocking. Parents can have children perform this activity at the beginning and end of a rainstorm and compare the results.

Children can make a rainbow on a sunny day with a garden hose or a prism. They can also observe puddles immediately after a storm, then later, when the puddles have had a chance to dry.

Children can read an outdoor thermometer and record the daily temperature in a journal. They can place ice cubes outside on several different days and see how long it takes them to melt. This can also be recorded in a journal.

Writing

Subject Areas and Skills Learned

Language development.

Rationale

Writing should be modeled by parents and encouraged in children at a very early age.

Experiences/Activities

Infant. When given a set of crayons, babies initially just chew on them. Gradually, they begin to see they can make marks on paper. These scribbles are an important preliminary form of writing.

Toddler. Toddlers love to write with all types of pens, pencils, markers, and crayons. They continue to scribble, but it is more purposeful. For example, a child may draw some circle-like scribbles, look at the picture, then shout "ball!" Parents who write for their children often help develop an understanding of the purpose of writing. It is good to start by writing the child's name—on his/her artwork, on a paper placemat or child's menu in a restaurant. The child will soon learn to say the letters of his/her name, even if they are not in the right order! Parents can also draw and label pictures of familiar objects, like ball, dog, and star. Some other good words to write are the names of important people, like dada, mama, papa, and baby. Children need many opportunities to scribble and write. Parents can compile pictures they have drawn into books for their children. Parents and toddlers can work together to make books on topics that interest the child. Examples include: *Animals* (using all the animals the child recognizes), *My Family*, *ABCs* (one page per letter of the alphabet), *Numbers* (one page per number, using one through five), *Colors*, *Words I Know*, *My Shape Book*, and *Favorite Things* (all the items the child holds dear, such as doll, ball, book, bottle, and blanket).

Preschool. As children get older, they can begin to label the objects in their drawings and paintings. Also, children should be encouraged to write their name on all of their artwork. It is also a good idea to have children describe their artwork, so parents can write down what was said on the paper for them (dictation). Certainly by the time they are in school they should be able to write their name, and perhaps the ABCs and some numbers. Parents can have children practice writing these things, so that by the time they enter school, they have a jump-start.

Primary. School-aged children should be encouraged to take risks in writing. This means parents should accept and praise all attempts at writing, even developmental or invented spelling. Gradually, through continued experience with reading, writing, listening, and speaking, children will acquire more language and learn to spell words conventionally. Parents should encourage children to write and illustrate their own stories.

Appendix A

Essential Home Learning Materials

- Blocks of all types (wooden, alphabet, plastic)
- Sidewalk chalk
- Crayons
- Paper
- Pencils, pens
- Water toys
- Sand toys
- Books
- Art materials
- Puzzles
- Games
- Musical toys
- Play dough and tools

Appendix B

List of Recommended Materials

ART

✏ aluminum foil ✏ ball-point pens ✏ bark ✏ beads ✏ buttons ✏ cardboard ✏ cellophane ✏ chenille stems (pipe cleaners) ✏ chalk ✏ Christmas cards (used or extra) ✏ clay ✏ clothespins (wooden) ✏ coffee filters ✏ colored pencils ✏ confetti ✏ construction paper (white and colored) ✏ contact paper scraps ✏ cookie cutters ✏ cord ✏ cotton balls ✏ craft (popsicle) sticks ✏ crayons (large ones for infants and toddlers, small ones for older children) ✏ crepe paper ✏ dried beans (natural or painted with tempera paint) ✏ dried pasta (natural or dyed with food coloring) ✏ dry cereal ✏ dye-cut shapes ✏ egg cartons ✏ envelopes ✏ fabric scraps ✏ feathers ✏ felt ✏ file folders ✏ fingerpaint ✏ foil pans ✏ gift wrap ✏ glitter ✏ glue (non-toxic: school, white, florescent, glitter) ✏ glue sticks ✏ graph paper ✏ greeting cards (new or used) ✏ gummed stars ✏ hole puncher (plain or with designs, like stars or flowers) ✏ lace ✏ leaves ✏ lined paper ✏ magazines ✏ markers (washable) ✏ milk cartons ✏ multicultural crayons (skin colors) ✏ newspaper ✏ newsprint paper ✏ paper bags ✏ paint brushes (large handled ones for toddlers) ✏ paint chip samples ✏ paper (all types, sizes, and colors) ✏ paper clips ✏ paper plates ✏ paper towels ✏ paper towel tubes ✏ paste ✏ pencils (large ones for toddlers) ✏ pine cones ✏ plastic cups ✏ plastic tumblers ✏ play dough ✏ pom poms (different colors and sizes) ✏ origami paper ✏ rhinestones ✏ ribbon ✏ rickrack ✏ rulers ✏ scissors (child-safe) ✏ scissors that make designs ✏ scrap paper ✏ seals and stamps (Easter or Christmas seals, stamps you get in the mail to buy magazines) ✏ seeds ✏ sequins ✏ shoelaces ✏ sidewalk chalk ✏ sketch pads ✏ smock or old T-shirt ✏ sponges (for clean up) ✏ sponges (cut into shapes) ✏ spools ✏ stapler ✏ stamps and stamp pad ✏ stationery ✏ stickers ✏ straws ✏ string ✏ styrofoam (shapes, packing material) ✏ T-shirt paints ✏ tablets of lined and drawing paper ✏ tape, clear ✏ tape, masking ✏ tempera paint (washable, non-toxic) ✏ thread ✏ tissue paper ✏ toilet paper tubes ✏ tongue depressors ✏ toothpicks ✏ tracing paper ✏ twine ✏ wallpaper scraps ✏ watercolors ✏ white paper ✏ wiggly eyes ✏ yarn ✏ AND A LARGE PLASTIC CONTAINER TO STORE IT IN!

MUSICAL INSTRUMENTS

(can be store-bought or handmade)

🔔 drums 🔔 kazoo 🔔 xylophone 🔔 maracas 🔔 shakers 🔔 tambourine 🔔 flute 🔔 rhythm sticks 🔔 jingle bells 🔔 triangle 🔔 bells 🔔 toy piano 🔔 castanets 🔔 cymbals 🔔 spoons 🔔 wind chimes 🔔 real piano 🔔 toy guitar 🔔 water glasses 🔔

MOLDABLE MATERIALS

➡ clay ➡ cookie cutters ➡ craft (popsicle) sticks ➡ gak ➡ goop ➡ homemade play dough ➡ lids ➡ play dough ➡ plastic garlic press ➡ plastic pastry fluter ➡ plastic placemats ➡ rainbow stew ➡ small rolling pin ➡ stamps ➡

SAND

➡ buckets ➡ cups ➡ funnels ➡ molds ➡ pails ➡ rakes ➡ scoops ➡ shovels ➡ sieves ➡ spoons ➡ strainers ➡ straws ➡ trowels ➡ watering can ➡

WATER

➡ bubble pipes ➡ bubble wands ➡ buckets ➡ chenille stems (pipe cleaners) ➡ eye dropper ➡ food coloring ➡ funnels ➡ measuring cups ➡ measuring spoons ➡ pails ➡ plastic baster ➡ plastic cups ➡ plastic egg cartons ➡ plastic soda bottles ➡ plastic squeeze bottles ➡ sieves ➡ small plastic shovels ➡ strainers ➡ straws ➡ styrofoam cups ➡ washcloths ➡

Appendix C

Traditional Songs, Nursery Rhymes, and Finger Plays

The following songs, nursery rhymes, and finger plays are traditional, handed down from generation to generation through oral repetition. Many books contain folk material such as this, sometimes different versions, depending on country or region. The versions included here are those that were sung to the author as a child. It is important to include the words to these songs, because words and verses can be forgotten over time. Teachers can provide parents with the words to some or all of these songs to sing with their children at home.

ABC Song

A, B, C, D, E, F, G,
H, I, J, K,
L, M, N, O, P,
Q, R, S, T, U, V,
W, X, Y, and Z.
Now I know my ABCs
Next time won't you sing with me?

Are You Sleeping?

Are you sleeping? Are you sleeping?
Brother John, Brother John
Morning bells are ringing,
Morning bells are ringing,
Ding, ding, dong!
Ding, ding, dong!

Baa, Baa, Black Sheep

Baa, baa, black sheep,
Have you any wool?
Yes, Sir, yes, Sir,
Three bags full:
One for my master,
One for my dame,
And one for little (*child's name*)
Who lives down the lane.

B-I-N-G-O

There was a farmer had a dog
And Bingo was his name-o!
B-I-N-G-O, B-I-N-G-O, B-I-N-G-O,
And Bingo was his name-O!

Frère Jacques

Frère Jacques, Frère Jacques
Dormez-vous? Dormez-vous?
Sonnez les matines, sonnez les matines,
Din, din, don!
Din, din, don!

Georgie Porgie, Pudding Pie

Georgie Porgie, pudding pie,
Kissed all the girls and made them cry.
When the boys came out to play,
Georgie Porgie ran away.

Head and Shoulders

Head and shoulders, knees and toes,
Knees and toes, knees and toes.
Head and shoulders, knees and toes.
Eyes, ears, mouth, and nose.

Hey Diddle Diddle, the Cat and the Fiddle

Hey diddle diddle, the cat and the fiddle,
The cow jumped over the moon.
The little dog laughed to see such sport
And the dish ran away with the spoon.

Hickory, Dickory, Dock

Hickory, dickory, dock
The mouse ran up the clock
The clock struck one
The mouse ran down
Hickory, dickory, dock.

Hokey Pokey

You put your *left hand* in
You put your *left hand* out
You put your *left hand* in
And you shake it all about
You do the Hokey Pokey and
You turn yourself around
That's what it's all about!
(additional verses: right hand, left foot, right foot, whole self)

Humpty Dumpty

Humpty Dumpty sat on a wall,
Humpty Dumpty had a great fall.
All the king's horses and all the king's men
Couldn't put Humpty together again.

Hush Little Baby

Hush little baby, don't say a word,
Mama's (or Dada's) gonna buy you a mocking bird.
And if that mocking bird don't sing,
Mama's gonna buy you a diamond ring.
And if that diamond ring don't shine,
Mama's gonna buy you a porcupine.
And if that porcupine's too prickly,
Mama's just gonna have to tickle you!
        (tickle baby)
So hush little baby, don't make a sound,
You're just the sweetest little baby in town.

If You're Happy and You Know It

If you're happy and you know it, clap your hands!
If you're happy and you know it, clap your hands!
If you're happy and you know it, then your face will surely show it,
If you're happy and you know it, clap your hands!

other verses:
mad...stomp your feet
surprised...raise your eyebrows
sad...wipe your eyes
agree...nod your head
tired...stretch and yawn
confused...turn around
happy...shout "Hooray!"

I'm Bringing Home My Baby Bumblebee

I'm bringing home my baby bumblebee.
Won't my mommy be so proud of me!
I'm bringing home my baby bumblebee.
Ooooh! It stung me!

I'm squishing up my baby bumblebee.
Won't my mommy be so proud of me!
I'm squishing up my baby bumblebee.
Ooooh! It's all over me!

I'm wiping off my baby bumblebee.
Won't my mommy be so proud of me!
I'm wiping off my baby bumblebee.
Ooooh! It's all over the floor!

I'm mopping up my baby bumblebee.
Won't my mommy be so proud of me!
I'm mopping up my baby bumblebee.
Oh, it's all gone now!

It's Raining, It's Pouring

It's raining, it's pouring,
The old man is snoring,
He went to bed and bumped his head
And he couldn't get up in the morning.

Jack and Jill

Jack and Jill
went up the hill.
To fetch a pail
of water.

Jack fell down
and broke his crown.
And Jill came
tumbling after.

Jack Be Nimble

Jack be nimble,
Jack be quick,
Jack jump over the candlestick.
Jack jumped high,
And Jack jumped low,
Jack jumped over and burnt his toe.

Jack Sprat

Jack Sprat could eat no fat,
His wife could eat no lean,
So between the two of them,
They licked the platter clean.

Let's Take a Bath (alternate version of Let's Take a Walk)

Let's take a bath,
Let's take a bath,
Let's take a bath,
To get all nice and clean.

Let's Take a Walk

Let's take a walk,
Let's take a walk,
Let's take a walk,
To see what we can see.

Little Boy Blue

Little Boy Blue, come blow your horn,
The sheep's in the meadow, the cow's in the corn.
Where is the boy that looks after the sheep?
He's under the haycock, fast asleep.
Will you wake him? No, not I!
For if I do, he's sure to cry.

Little Bo Peep

Little Bo Peep has lost her sheep,
And doesn't know where to find them;
Leave them alone, and they'll come home,
Wagging their tails behind them.

Little Jack Horner

Little Jack Horner
Sat in the corner,
Eating a Christmas Pie,
He put in his thumb,
And pulled out a plum,
And said, "What a good boy am I!"

Little Miss Muffet

Little Miss Muffet
Sat on a tuffet,
Eating her curds and whey;
Along came a spider,
And sat down beside her
And scared poor Miss Muffet away.

London Bridge

London Bridge is falling down,
Falling down, falling down.
London Bridge is falling down,
My fair lady.

Take the key and lock her up,
Lock her up, lock her up.
Take the key and lock her up,
My fair lady.

Loopy Loo

Chorus:
Here we go loopy loo,
Here we go loopy light.
Here we go loopy loo,
All on a Saturday night.

You put your right hand in,
You put your right hand out,
You give your hand a shake, shake, shake,
And turn yourself about.
(additional verses: left hand, right foot, left foot, right arm, left arm, right leg, left leg, head, whole self)

Mary Had a Little Lamb

Mary had a little lamb, little lamb, little lamb
Mary had a little lamb, its fleece was white as snow.
Everywhere that Mary went, Mary went, Mary went
Everywhere that Mary went, the lamb was sure to go.

Mary, Mary, Quite Contrary

Mary, Mary, quite contrary,
How does your garden grow?
With silver bells and cockle shells,
And pretty maids all in a row.

Muffin Man

Do you know the muffin man?
The muffin man, the muffin man.
Do you know the muffin man
Who lives on Gingerbread Lane?

Yes, I know the muffin man.
The muffin man, the muffin man.
Yes, I know the muffin man
Who lives on Gingerbread Lane.
(*man* can be replaced with *girl* or *boy*, and *Gingerbread Lane* can be replaced with the street name the child lives on)

Old King Cole

Old King Cole was a merry old soul,
A merry old soul was he.
He called for his pipe and
He called for his bowl and
He called for his fiddlers three.

Old McDonald Had a Farm

(substitute the italicized words for other animals and sounds)

Old McDonald had a farm, E - I - E - I - O!
And on this farm he had a *cat*
E - I - E - I - O!

With a *__meow__*, *__meow__* here and
A *__meow__*, *__meow__* there.
Here a *__meow__*, there a *__meow__*,
Everywhere a *__meow__*, *__meow__*.
Old McDonald had a farm,
E - I - E - I - O!

One for the Money

One for the money,
Two for the show,
Three to get ready,
Four to go!

One Potato

One potato, two potato,
Three potato, four
Five potato, six potato,
Seven potato, more.

One, Two, Buckle My Shoe

One, two, buckle my shoe
Three, four, shut the door
Five, six, pick up sticks
Seven, eight, lay them straight
Nine, ten, do it again.

Open, Shut Them

Open, shut them,
(open and shut child's arms)
Open, shut them,
Clap, clap, clap, clap, clap,
Open, shut them,
Open, shut them,
Put them in your lap!
(put child's hands in lap)
Creep them, creep them,
Creep them, creep them,
Right up to your chin,
(walk fingers up child's leg and chest up to the chin)
Open up your little mouth,
But do not let them in!

Patty Cake

Patty cake, patty cake
Baker's man
Bake me a cake as fast as you can!
Pat it, and prick it, and mark it with a "b",
And put it in the oven for baby and me!
(Replace the letter "b" for the first letter of child's name and the word "baby" with child's name.)

Pease Porridge Hot

Pease porridge hot,
Pease porridge cold,
Pease porridge in the pot
Nine days old.
Some like it hot,
Some like it cold,
Some like it in the pot
Nine days old.

Other verses:
I like it hot...
You like it hot...
She likes it hot...
He likes it hot...
They like it hot...
We like it hot...

Pop! Goes the Weasel

Round and round the cobbler's bench
The monkey chased the weasel
The monkey thought 'twas all in fun
Pop! goes the weasel.

A penny for a spool of thread
A penny for a needle
That's the way the money goes
Pop! goes the weasel.

Rain on the Green Grass

Rain on the green grass
And rain on the sea.
Rain on the rooftops
But not on me!

Rain, Rain, Go Away

Rain, rain, go away
Come again some other day.
Little *(child's name)* wants to play.
Rain, rain, go away.

Ring Around the Rosy

Ring around the rosy,
Pocket full of posies,
Ashes, ashes,
We all fall down!

Row Your Boat

Row, row, row your boat
Gently down the stream,
Merrily, merrily, merrily, merrily,
Life is but a dream.

Skip to My Lou

Chorus:
Skip, skip, skip to my Lou,
Skip, skip, skip to my Lou,
Skip, skip, skip to my Lou,
Skip to my Lou my darling.

Lost my partner, what will I do?
Lost my partner, what will I do?
Lost my partner, what will I do?
Skip to my Lou, my darling.

Additional verses:
Find me a pretty one, that's what I'll do...
Flies in the buttermilk, shoo fly, shoo...

Star Light, Star Bright

Star light, star bright,
First star I see tonight,
I wish I may, I wish I might
Have this wish I wish tonight.

Teddy Bear, Teddy Bear

Teddy bear, teddy bear,
Turn around.
Teddy bear, teddy bear,
Touch the ground.
Teddy bear, teddy bear,
Shine your shoes.
Teddy bear, teddy bear,
That will do!

Ten Little Monkeys

Ten little monkeys
Jumping on the bed.
One fell off and bumped its head.
Mama called the doctor and
The doctor said, "No more monkeys jumping on the bed!"

Additional verses:
Nine little monkeys...
Eight little monkeys...
Seven little monkeys...
Six little monkeys...
Five little monkeys...
Four little monkeys...
Three little monkeys...
Two little monkeys...
One little monkey...

The Ants Go Marching

The ants go marching one by one, hurrah, hurrah!
The ants go marching one by one, hurrah, hurrah!
The ants go marching one by one,
The little one stopped to suck his thumb,
And they all went marching down
To the earth to get out of the rain.
Boom, boom, boom.

Other verses:
The ants go marching two by two...The little one stopped to tie his shoe.
The ants go marching three by three...The little one stopped to climb a tree.
The ants go marching four by four...The little one stopped to knock at the door.
The ants go marching five by five...The little one stopped to do the jive.
The ants go marching six by six...The little one stopped to pick up sticks.
The ants go marching seven by seven...The little one stopped to go to heaven.
The ants go marching eight by eight...The little one stopped to close the gate.

The ants go marching nine by nine...The little one stopped to walk on a line.
The ants go marching ten by ten...The little one stopped to say, "The End!"

The Bear Went Over the Mountain

The bear went over the mountain
The bear went over the mountain
The bear went over the mountain
To see what he could see.

And all that he could see
And all that he could see
Was the other side of the mountain
The other side of the mountain
The other side of the mountain
Was all that he could see.

The Itsy Bitsy Spider

The itsy bitsy spider
Crawled up the waterspout.
Down came the rain and
Washed the spider out.
Out came the sun and
Dried up all the rain.
And the itsy bitsy spider
Crawled up the spout again.

The Farmer in the Dell

The farmer in the dell,
The farmer in the dell,
Heigh-ho, the derry-o,
The farmer in the dell.

Additional verses:
The farmer takes a wife...
The wife takes a child...
The child takes a nurse...
The nurse takes the dog...
The dog takes the cat...
The cat takes the rat...
The rat takes the cheese...
The cheese stands alone...

The Wheels on the Bus

The wheels on the bus go 'round and 'round,
'Round and 'round, 'round and 'round.
The wheels on the bus go 'round and 'round,
All through the town.

Other verses:
The windows on the bus go up and down...
The wipers on the bus go swish, swish, swish...
The money on the bus goes clink, clink, clink...
The horn on the bus goes beep, beep, beep...
The babies on the bus go "Wah, wah, wah!"...
The mommies on the bus go "I love you!"...
The daddies on the bus go "I love you!"...

This is the Way We Brush Our Teeth

(can be replaced with other verses, such as wash our hair, go to school, etc.)

This is the way we brush our teeth
Brush our teeth, brush our teeth
This is the way we brush our teeth
So early in the morning.

This Little Piggy

This little piggy went to market.
    (wiggle child's big toe)
This little piggy stayed home.
    (wiggle child's second toe)
This little piggy ate roast beef.
    (wiggle child's third toe)
This little piggy had none.
    (wiggle child's fourth toe)
But this little piggy cried, "Wee, wee, wee!"
    (wiggle child's pinkie toe)
All the way home.
    (run fingers from the toes, up the leg, and to the neck, tickling the child)

This Old Man

This old man, he played one,
He played knick-knack on my drum.
With a knick-knack, patty wack
Give a dog a bone
This old man came rolling home.
additional verses:
two—shoe
three—knee
four—door
five—hive
six—sticks
seven—heaven
eight—gate
nine—line
ten—once again

Toys Away

Toys away, toys away,
Time to put your toys away.
Toys away, toys away,
Time to put your *(name of a toy)* away!

Twinkle, Twinkle Little Star

Twinkle, twinkle, little star
(move hands in a sweeping motion above the head and wiggle fingers)
How I wonder what you are!
Up above the world so high,
Like a diamond in the sky.
(make a diamond shape with the fingers of both hands)
Twinkle, twinkle, little star
(move hands again in a sweeping motion above the head and wiggle fingers)
How I wonder what you are!

Vowel Song (Apples and Bananas)

I like to eat,
Eat, eat, eat
I like to eat
apples and bananas.

I like to ate,
Ate, ate, ate
I like to ate
Apples (long a) and ba-nay-nays.

I like to eat,
Eat, eat, eat
I like to eat
Epples and ba-nee-nees.

I like to ite,
Ite, ite, ite
I like to ite
Ipples and ba-nigh-nighs.

I like to oat,
Oat, oat, oat
I like to oat
Opples and ba-no-nos.

I like to ute,
Ute, ute, ute
I like to ute
Upples and ba-nu-nus.

And now I am through,
Through, through, through
Now I am through,
With A, E, I, O, U,
And sometimes Y...

Where is Thumbkin?

Where is Thumbkin?
(hands behind back)
Where is Thumbkin?
Here I am, here I am!
(one thumb comes out, then the other)
How are you today, sir?
(wiggle one thumb)
Very well, I thank you.
(wiggle other thumb)
Run away, run away.
(hands behind back again)

continue with:
Where is Pointer?
Where is Tall Man?

Where is Ring Man?
Where is Pinkie?
Where is everybody?

Where, Oh Where is ___________?

Where, oh where, oh where is ___________?
Where, oh where, oh where is ___________?
Where, oh where, oh where is ___________?
Where can ___________ be?

Chapter Five

Summary, Conclusions, and Recommendations

Summary

Chapter One briefly described some of the challenges California's elementary schools face today. Student populations are becoming larger and more diverse. Classes are getting smaller, creating a need for additional classrooms and teachers. The current need for new teachers is so great that many districts are hiring uncertified personnel to fill teaching positions in Kindergarten, first, and second grade. Today's parents also face enormous challenges. Many must raise their children in single-parent households. Other families have two parents living at home, but both must work. Regardless of their cultural or ethnic background, native language, or socioeconomic status, virtually all parents want their children to succeed in school. They want them to speak and read English, possess fundamental math skills, and understand basic science concepts. Many parents would like to help their children learn at home, but do not know how. Teachers are in a unique position to assist parents; providing them with information as to the critical nature of parent-child interaction in early childhood development and suggesting appropriate home learning activities.

Chapter Two summarized the current research in the areas of parent involvement, brain development, and early childhood development. There are many types of parent involvement, encompassing participation both at home and at school. There are also several barriers that can impede parent involvement. One aspect of parent involvement, parent-child interaction at home, is extremely important. Beginning at birth, parents have the opportunity to shape the lives of their children, including their intellectual and academic potential. These claims are backed up by research in brain development and research on the impact parent-child interaction has on children's early cognitive, social, and emotional development (birth to age eight). Teachers can play a critical role in improving parent participation and promoting positive home-school connections. Through increased parent involvement, teachers can encourage positive parent-child interaction at home. Teacher training and availability of information in this area is essential in order for these issues to be addressed.

Chapter Three provided a description of the format of the handbook, which is organized as follows: improving home-school connections; encouraging positive parent-child interaction at home; and alphabetical list of specific learning experiences and activities parents can do with their children to promote literacy, math, and science development.

Chapter Four is the heart of this project—a teacher's handbook for improving home-school connections and encouraging positive parent-child interaction at home. The first chapters provide examples for teachers of ways they can improve parent-teacher communication through stronger parent-teacher relationships; increase parent involvement in the classroom and at school; and promote positive parent-child interaction at home. The last chapter of the handbook provides teachers with a plethora of learning experiences parents can provide their children with at home to help them improve in the areas of literacy, math, and science development. The activities described are fun, challenging, and inexpensive.

Conclusions

According to the research presented in this master's project, parent involvement is critical to the intellectual, social, and emotional development of children. Indeed, children's potential for academic success is determined by a combination of nature (genes, heredity) and nurture (environment, experiences). Abundant positive parent-child interaction from birth is key for the future success and happiness of every child.

There are many things teachers can do to promote parent-child interaction at home. First, teachers must build strong relationships with parents and establish positive two-way communication between home and school. This is the cornerstone of home-school connections.

There are many ways to accomplish this, including phone calls and home visits. Second, teachers should encourage parents to work with their children at home. This can be accomplished through a strong home learning program, including homework assignments, activity bags, and home reading. Last, teachers can promote parent-child interaction through weekly or monthly parent education classes. Such classes are a wonderful opportunity for teachers and parents to engage in reciprocal communication and sharing of ideas.

In the area of parent involvement it is important for teachers to look to their own classrooms as a starting point to begin strengthening home-school connections and improving parent-child interaction. The teacher's sphere of influence may seem small at first—just the twenty to thirty children in the class that year, but it is actually much larger than that. As teachers work to improve the lives of their students, so too are the lives of the students' brothers and sisters improved. This is an important concept, because eventually these younger siblings will enter school and be a part of the elementary classroom.

Teachers also have the power and potential to influence their colleagues, particularly those teachers in the same grade level. Teachers can serve as role models to new teachers as well. Through a good example, they can pave the way for improvement in their school.

Teachers might consider starting small, and building upon their parent involvement program over time. They can set attainable goals, and each year add to their program. One such goal might be to resolve to build stronger relationships with the parents. This may mean making an effort to establish early contact with parents, in the form of welcome letters, phone calls, and perhaps one home visit each. The next year, the teacher may add the use of home response journals. Each year, the program should be evaluated and fine-tuned: teachers can keep what works and drop what is ineffective.

It is a good idea for teachers to consider the potential benefits of starting their own parent education program. They can start with holding one or two classes a year and progress to monthly sessions. As teachers make the effort to provide and receive information from the parents, the idea may catch on, and spread to other classrooms. One teacher could be a catalyst for a school-wide program. Such support could mean more resources from the school and district.

Teachers are pulled in many directions all throughout the school year. There are mandatory meetings and adjunct duties, classes to take to keep the teaching credential current and school events to prepare for. Teachers have personal lives, including children of their own to attend to. Teachers are also dedicated and generous. Characteristically, they spend much of their own money and time devising ways to improve the quality of education in their classrooms. Improving parent involvement may seem like an insurmountable challenge. However, time invested in bettering home-school connections improves the lives of students. It is an investment worth making. So often in education we try to cure the symptoms, but do not get to the root of the problem. Insufficient parent-child interaction is one of the roots of the problem of low student achievement. Teachers know this, and they can do something about it.

Teachers and parents are not the only ones who have a responsibility to address this issue. Schools, school districts, universities, and government can provide monetary and other resources to help educate parents as to the role they play in their children's education from the very start of their lives. As far as the government is concerned, this could mean a community awareness program, perhaps including billboards or TV commercials educating parents about the importance of positive parent-child interaction. As far as schools and school districts are concerned, this could mean additional teacher in-service and support, perhaps in the form of workshops, grants, and availability of needed materials. As far as universities are concerned, this could mean additional teacher preparation in the area of parent involvement and parent-child interactions.

Recommendations

Additional research is needed to address the following questions:

1. How might the implementation of a parent education program affect the classroom teacher, students, and parents?

   A classroom teacher could implement their own parent education program, then evaluate the results through a variety of quantitative and qualitative measures. Through an actual trial run of a program, potential problems, challenges, and successes could be documented and evaluated. After a full school year, recommendations could be made to improve the future implementation of such programs.

2. How might teachers, students, and parents be affected by the implementation of a program to strengthen home-school connections?

   A potential action research study could be for a teacher to plan and implement a program to strengthen home-school connections. The teacher could then evaluate the results using measures such as student test scores; student, parent, and teacher attitude surveys; on-going assessment of student literacy, math, and science development; and documentation of attendance at parent-teacher conferences. Teachers could then compare previous and present data from these measures to see if improvement was made.

3. How might an increase in positive parent-child interaction affect student achievement?

   Another idea for further study would be for a classroom teacher to conduct an action research study of the effects of parent-child interaction on student achievement in an elementary classroom. Several studies have been conducted on the effects of early parent-child interaction on future achievement (for example, preschool children and their parents have been studied and their academic achievement in elementary school later documented). However, it may be beneficial to study a single classroom during the course of one school year. The design of the study might be to compare differences in student progress between students whose parents participated in a teacher recommended parent-child interaction program versus parents who did not participate. Perhaps half of the parents would agree to work with their children on additional literacy, math, and science related activities at home (experimental group) and the other half of the students and parents would participate in the teacher's regular program of required homework (control group). Or, if there was an overwhelming response by parents to participate in a parent-child interaction program, perhaps all the parents who wished to participate would be allowed to do so. Of course, parents who chose not to participate might have circumstances at home that would negatively affect student progress. These types of issues would have to be taken into account. In any case, student achievement could be measured by the amount of progress made during the school year (e.g. Did the student progress one full grade level during the study period?). Actual student achievement could be compared with the school's average student achievement (determined via test scores or progress reports), traditional student achievement (most students are expected to progress one grade level per year), or projected achievement (the progress the teacher expected the children to achieve that year).

Parent-child interaction at home has the potential to dramatically affect student achievement in elementary schools. It is important that teachers, administrators, parents, lawmakers, and society look at this issue carefully and work together toward improvement in this area. It is unproductive to blame one group or another for low parent involvement, poor parent-child interaction, or low student achievement. It is unfair to expect teachers to be able to correct the effects of years of low parent-child interaction during the course of one school year. It is not right to expect a child to be at grade level or to produce stunning test scores when they lack a solid foundation, constructed from birth on, in literacy, math, and science. Teachers and parents, especially, can work together to correct these problems, to better prepare students before the onset of formal education, to provide on-going assistance once formal education has begun, and ultimately, help students reach their full potential. Individual schools, school districts, communities, and government should support teachers in this area, through teacher training, community awareness, and monetary and other resources.

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